INTERNATIONAL FIELD YEAR FOR THE GREAT LAKES

IFYGL BULLETIN NO.16

November 1975

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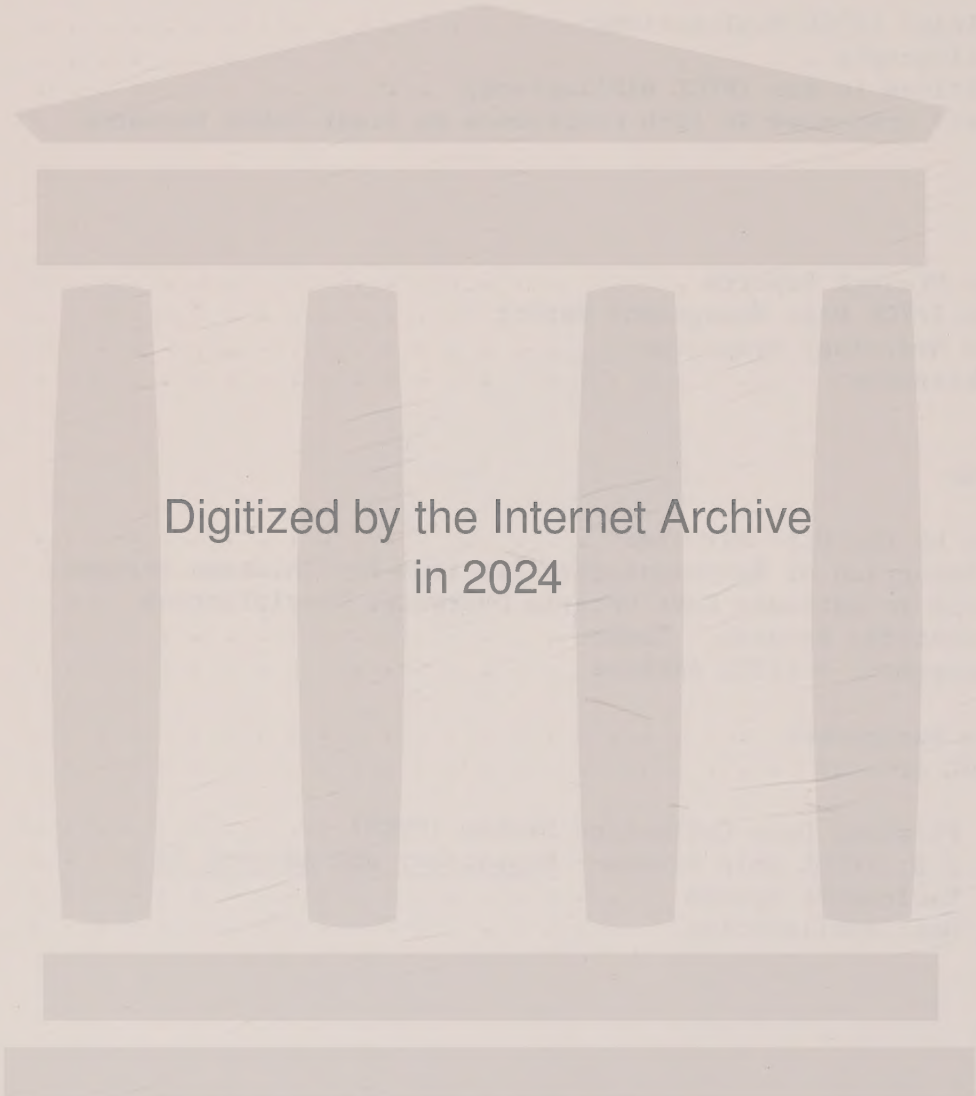

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A joint Canadian-United States list of publications related to IFYGL was included in IFYGL Bulletin No. 13, and will appear, cumulatively, in all subsequent issues. Additions will be identified as such in each Bulletin. Any questions, comments, or additions to the bibliography should be addressed to one of the IFYGL Coordinators as follows:

Mr. W. L. Ranahan
Canadian IFYGL Coordinator-ACHC
Atmospheric Environment Service
Environment Canada
4905 Dufferin Street
Downsview, Ontario M3H 5T4

Mr. C. F. Jenkins
U.S. IFYGL Coordinator
Great Lakes Environmental Research Laboratory
2300 Washtenaw Avenue
Ann Arbor, Michigan 48104

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IFYGL Technical Plan, Volumes 1-4 (series complete, 1971)[1, 2]

IFYGL Canadian Projects, March 1972 (series complete, 1973)[2]

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[1]Available in the United States from the
U.S. IFYGL Project Office
Great Lakes Environmental Research Laboratory
2300 Washtenaw Avenue
Ann Arbor, Michigan 48104

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Canadian IFYGL Centre - ACHC
Atmospheric Environment Service
4905 Dufferin Street
Downsview, Ontario M3H 5T4

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Clark, P. A. A., and F. Sciremammo, "On Nutrient Transport From the Genesee," RFO EPA, Rochester, New York.

Csanady, G. T., "Time-Average Circulation in Shallow Seas," Woods Hole Oceanographic Institution, Woods Hole, Massachusetts.

Czaika, S. C., "Crustacean Zooplankton of Southwestern Lake Ontario in Spring 1973 and at the Genesee and Niagara River Mouth Areas in 1972 and Spring 1973," Great Lakes Laboratory, State University College at Buffalo, New York.

Dilley, J. F., and A. Pavlak, "Lake Shore Ice Formation, Growth, and Decay," General Electric Company, Philadelphia, Pennsylvania.

Donelan, M. A., "The Influence of Wind-Generated Waves on the Wind Profile," Canada Centre for Inland Waters, Burlington, Ontario.

Donelan, M. A., and F. C. Elder, "Evaluation of the Measurement Accuracy of the CCIW IFYGL Meteorological Buoy," Canada Centre for Inland Waters, Burlington, Ontario.

Hovanec, R. D., and J. A. Almazan, "A Comparison of the U.S. and Canadian Meteorological Buoy Data During IFYGL," Center for Experiment Design and Data Analysis, National Oceanic and Atmospheric Administration, Washington, D.C.

Landsberg, D. R., and J. T. Scott, "On the Cyclonic Mean Circulation in Lake Ontario," State University of New York at Albany, New York.

Letki, P. J., "Carbonate and Organic Carbon in the Sediments of the Southwestern Nearshore Zone of Lake Ontario (IFYGL), State University College at Buffalo, New York.

Liu, P. C., and T. A. Kessenich, "IFYGL Ship Wave Observations vs. Wave Measurements," GLERL, NOAA, Ann Arbor, Michigan.

Murthy, C. R., "Horizontal Diffusion Characteristics in Lake Ontario," Canada Centre for Inland Waters, Burlington, Ontario.

Ploscya, J. A., "Seasonal Distribution of Chlorophyll A in the Near-Shore Zone of Southwestern Lake Ontario (IFYGL)," State University College at Buffalo, New York.

Polcyn, F. C., and T. W. Wagner, "Production of Hydrological Computer Maps of the Lake Ontario Basin," Environmental Research Institute of Michigan, Ann Arbor, Michigan.

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Thomann, R. V., and R. P. Winfield, "Estimated Response of Lake Ontario Phytoplankton Biomass to Nutrient Reduction," Manhattan College, Bronx, New York.

Thomas, N. A., "Lake Ontario Sediment Oxygen Demand Rates," EPA, Grosse Ile, Michigan.

Watson, N. H. F., and D. J. Williams, "Design and Operation of a Pilot Surveillance Program for Lake Ontario," Canada Centre for Inland Waters, Burlington, Ontario.

CANADA

Editor	W. L. Ranahan
Typing	L. S. Tozer

CANADIAN PROJECT REPORTS

Notes: 1. Projects are numbered consecutively.

2. The letters following the number indicate which panel has prime responsibility for the project.

BC - Biology-Chemistry
BL - Boundary Layer
EB - Energy Budget
ME - Lake Meteorology and Evaporation
TW - Terrestrial Water Balance
WM - Water Movement
F - Feasibility

Project

1F: *Remote Sensing*

Principal Investigator: K.P.B. Thompson - CCIW

The project is complete. Three scientific papers have resulted from this project, and are listed in the IFYGL Bibliography. Two were authored by the Principal Investigator and a third is listed under R.P. Bukata.

3WM: *Statistical Predication of Lake Currents*

Principal Investigator: H.S. Weiler - CCIW

This project has been cancelled and there will be no material submitted to the IFYGL Data Bank.

4WM: Included in Project 45WM: *Lake Current Measurements*

5BL: *Direct Measurement of Energy Fluxes*

Principal Investigator: M. Donelan - CCIW

A number of papers have resulted from this project to date, and two have been published in the Proceedings of the 17th Conference on Great Lakes Research (IAGLR). They are entitled "Determination of the Aerodynamic Drag Coefficient from Wind Set-up" and "Generalized Profiles of Wind Speed, Temperature, and Humidity" and are listed in the Bibliography under the Principal Investigator. A further paper was presented at the 18th Conference on Great Lakes Research (IAGLR)

in May, entitled "The Influence of Wind Generated Waves on the Wind Profile" by M.A. Donelan.

8EB: *Shore Gauging Stations of Water Temperature*

Principal Investigator: D.G. Robertson - CCIW

A report on the results of the observations will be incorporated with the final report on Project 42EB by F.M. Boyce.

9EB: Included in Project 42EB.

11TW: *Monthly Water Balance of the Lake Ontario Basin*

Principal Investigator: D.F. Witherspoon - IWD, Cornwall

The calculations for this project are complete. The final report will be in the Terrestrial Water Balance Panel Report. The following is a list of scientific papers that resulted from this IFYGL project:

Witherspoon, D.F. "A Hydrologic Model of the Local Lake Ontario Basin", Technical Bulletin No. 31. Inland Waters Branch, EM&R, Ottawa, Canada, 1970.

Witherspoon, D.F. "Storage in the Water Balance of the Lake Ontario Basin", Proceedings, World Water Balance Symposium, Reading, England, 1970.

Witherspoon, D.F. "Operational Uses of Regional Water Balance in the Lake Ontario Basin", presented at the Canadian Hydrology Symposium, Winnipeg, August, 1975.

12TW: *Monthly Water Balance of Lake Ontario*

Principal Investigator: D.F. Witherspoon - IWD, Cornwall

This project is essentially complete except for the writing of the final report of the Terrestrial Water Balance Panel. The outline of the report has been approved in principle by the IFYGL Joint Management Team. Final results await radar precipitation final values for the lake. The following papers have resulted from this project:

Witherspoon, D.F. "General Water Balance of Lake Ontario and Its Local Land Basin", International Geographical Congress, Montreal, August, 1972.

DeCooke, B.G. and D.F. Witherspoon. "Preliminary Lake Ontario Water Balance During IFYGL", Proceedings, 16th Conference, Great Lakes Research (IAGLR), Sawmill Creek, Ohio, April 1973.

DeCooke, B.G. and D.F. Witherspoon. "An Estimate of the Water Balance of Lake Ontario During IFYGL", Proceedings, IFYGL Symposium, 55th Annual Meeting, American Geophysical Union, April 8-12, 1974.

13TW: *Groundwater Flow into Lake Ontario*

Principal Investigator: D.H. Lennox - IWD

This project is complete. Two publications have resulted under the authorship of C.J. Haefeli and are listed in the IFYGL Bibliography.

14TW: *Hydrology of Lake Ontario*

Principal Investigator: E.A. MacDonald - IWD

The data have been submitted to the IFYGL Data Bank and the project is now complete.

15BL: *Space Spectra in the Free Atmosphere*

Principal Investigators: G.A. McBean and E.G. Morrissey - AES

Two papers have resulted from this project to date: "On the Spectral Structure of Turbulence in the Atmospheric Ekman Layer" by B.R. Kerman and "Reduction and Preliminary Analysis of Mesoscale Meteorological Data provided by NAE Low Level Research Flights in Connection with the IFYGL Program Technical Report", by D.W.B. Prentice.

16ME: *Airborne Radiation Thermometer Survey*

Principal Investigator: J.G. Irbe - AES

This project is complete. A complete report was included in IFYGL Bulletin No. 9.

18ME: *Climatological Network*

Principal Investigator: J.A.W. McCulloch - AES

This project is complete.

19ME: Included in Project 66ME.

20ME: *Bedford Tower Program*

Principal Investigator: J.A.W. McCulloch - AES

A software company was commissioned to write the necessary program to convert from sensor output to scientific units and to apply calibration corrections. The program has been written and production runs will begin about September.

21ME: *Canadian Shoreline Network*

Principal Investigator: J.A.W. McCulloch - AES

Preliminary tapes for the first six months for all six stations have been submitted to the Data Bank, with data for the remaining six months being available by the end of October.

22ME: *Synoptic Studies*

Principal Investigators: J.A.W. McCulloch and M.S. Webb - AES

Little work will be done until data are available from Canadian Shoreline stations, and U.S. towers, buoys, and shoreline stations.

23ME: *Radar Precipitation*

Principal Investigator: D.M. Pollock - AES

The Canadian IFYGL Radar data for April through November 1972 have been digitized, quality-controlled, and archived on magnetic tape. The precipitation gauge data were previously analysed and programs for intercomparison of the gauge and radar estimates of precipitation are now operating. Adjustment of the radar precipitation field using the gauge information has been carried out for selected storms.

24ME: *Climatological Studies*

Principal Investigator: D.W. Phillips - AES

The IFYGL Data Bank has been provided with a complete set of six-hourly weather maps on microfilm, covering the IFYGL Data period. The paper "Climatological Weather Highlights During IFYGL" was

accepted for publication in the Proceedings, 17th Conference on Great Lakes Research (IAGLR). The series "IFYGL Weather Data" for the Field Year has been published in an AES Technical Memorandum, No. 814.

25ME: *Lake Ontario Evaporation by Mass Transfer*

Principal Investigator: J.G. Irbe - AES

Monthly and daily evaporation estimates have been prepared by the mass transfer method, and have been submitted to the Evaporation Synthesis Group.

26ME: *Wind and Humidity Ratios*

Principal Investigator: J.G. Irbe - AES

No further progress to report.

27ME: *Island Precipitation Network*

Principal Investigator: J.A.W. McCulloch - AES

The data have been published in Supplementary Precipitation, Vol. 4, No's. 2 and 3.

28BL: *Momentum, Heat, and Moisture Transfer*

Principal Investigators: G.A. McBean, H.C. Martin, R.J. Polavarapu - AES

Data analysis is complete and a comprehensive data report has been submitted to the IFYGL Data Bank. The Data Report was presented in Bulletin No. 13. A recent paper on this subject was published in the Proceedings, 17th Conference on Great Lakes Research, entitled "Turbulent Kinetic Energy Balance Near the Frozen Surface of Eastern Lake Ontario" by C.S. Maddukuri and W.R. Frisken.

29BL: *Space and Time Spectra*

Principal Investigators: F.B. Muller and C.D. Holtz - AES

Data for the synoptic network have been provided to the IFYGL Data Bank. Additional data from the meso-scale network are held by the Principal Investigators.

30F: *CCGS Porte Dauphine - IFYGL Operations*

Principal Investigator: G.K. Rodgers - CCIW

Completed.

32EB: *Thermal Bar Study*

Principal Investigator: G.K. Rodgers - CCIW

Further progress is not likely until the results of the study regarding the heat content change of Lake Ontario are made available.

34WM: *Circulation Near Toronto*

Principal Investigator: G.K. Rodgers - CCIW

The final report is in preparation.

36EB: *Electronic Bathythermograph*

Principal Investigator: G.K. Rodgers - CCIW

This project is complete.

38TW: *Groundwater*

Principal Investigator: R.C. Ostry - OME

Several papers resulting from this project are listed in the IFYGL Bibliography under the Principal Investigator and S.N. Singer.

40WM: *Coastal Chain Study*

Principal Investigator: G.T. Csanady - University of Waterloo

Completed.

42EB: *Heat Storage of Lake Ontario*

Principal Investigator: F.M. Boyce - CCIW

A draft of the final report on this project has been completed.

43EB: *Internal Wave Measurements*

Principal Investigator: F.M. Boyce - CCIW

The final data report is being compiled by C.H. Mortimer of the University of Wisconsin using input from F.M. Boyce.

44BL: *Analysis of Energy Fluxes*

Principal Investigator: F.C. Elder - CCIW

Preliminary estimates of the energy fluxes have been computed on a weekly basis and entered into the data archives. A paper has been prepared in cooperation with J.A. Davies and F.M. Boyce and will appear in Part II of the Proceedings of the 17th Conference on Great Lakes Research. The paper is entitled "Preliminary Energy Budget of Lake Ontario for the Period May Through November, 1972."

45WM: *Lake Current Measurements*

Principal Investigator: E.B. Bennett - CCIW

There is no further progress to report beyond that outlined in the paper "IFYGL Water Movement Program" co-authored by E.B. Bennett and J.H. Saylor. This paper was published in Proceedings, IFYGL Symposium, 55th Annual Meeting of the American Geophysical Union, Washington, D.C., April, 1974.

46TW: *St. Lawrence-Niagara River Measuring Program*

Principal Investigator: M.H. Quast - IWD

This project is complete. The data report has been submitted.

47TW: *Computer Modelling*

Principal Investigator: L.E. Jones - University of Toronto

No report available.

49TW: *Snow Stratigraphy and Distribution*

Principal Investigator: W.P. Adams - Trent University

The paper, "Areal Differentiation of Snowcover in East Central Ontario" by W.P. Adams has resulted from this project. The abstract is as follows: Patterns of variation of snow depth, density, and

water equivalent are identified using snow course, snow grid and random sample measurements. The limitations of generalizations about snowcover types in areas where mid-winter melt is a feature of snowcover evolution are discussed.

54BC: *Groundwater Supply Near Kingston*

Principal Investigator: W.A. Gorman - Queen's University

One paper has resulted from this project which is now complete. The paper entitled "Geochemistry of Deadman Bay Near Kingston, Ont." was prepared by L.M. Johnston as a M.Sc. Thesis.

55EB: Included in 32EB.

62ME: *Evaporation Synthesis*

Principal Investigator: J.A.W. McCulloch - AES

A meeting of the Evaporation Synthesis Group was held in November 1974, in Windsor, Ontario. Preliminary results in the various evaporation projects were presented and the future activities of the synthesis group were discussed. Indications were that little progress could be made by the group for another year, until some of the evaporation studies were nearer completion. Another meeting of the Group is planned for November, 1975.

63EB: *Airborne Water Balance Study*

Principal Investigator: T.B. Kilpatrick - AES

This project is complete. A detailed report of the project's activities was included in Bulletin No. 9.

64ME: *Atmospheric Water Balance Study*

Principal Investigator: H.L. Ferguson - AES

A comprehensive report on this project was included in Bulletin No. 12. Three papers have resulted to date: "The Atmospheric Budgets Program of IFYGL" by E.M. Rasmusson, H.L. Ferguson, J. Sullivan and G. den Hartog; and "A Spectral Investigation of Horizontal Moisture Flux in the Troposphere" by A.D.J. O'Neill and H.L. Ferguson. A third paper entitled "Atmospheric Water Balance Over Lake Ontario" by J. Sullivan, E.M. Rasmusson and H.L. Ferguson, was presented at the 18th Conference on Great Lakes Research in May.

65ME: *Special Shoreline Evaporation Pan Network*

Principal Investigator: J.A.W. McCulloch - AES

The data collection is complete, and the data are now awaiting processing by the Office of Hydrology, U.S. National Weather Service, NOAA.

66ME: *Basin Evapotranspiration*

Principal Investigator: H.L. Ferguson - AES

This project is now complete. A status report was presented in Bulletin No. 12, the abstract of a paper "Monthly Evapotranspiration Estimates for the Canadian Land Portion of the Lake Ontario Basin During IFYGL" by H.L. Ferguson and W.D. Hogg. This paper has been published in the Proceedings, 17th Conference for Great Lakes Research.

67ME: *Surface Water Temperature Distribution*

Principal Investigator: M.S. Webb - AES

The report on this project was published in the Proceedings, 17th Conference on Great Lakes Research (IAGLR) and was entitled, "Mean Monthly Temperatures of Lake Ontario During the IFYGL" by M.S. Webb.

68F: *CCIW Supporting Resources*

Principal Investigator: P.G. Sly - CCIW

Continues.

69TW: *Pleistocene Mapping*

Principal Investigator: E.P. Henderson - GSC

No report available.

70WM: *Ground Truth for Remote Sensing*

Principal Investigator: A Falconer - Univ. of Guelph

No report available. See Bulletin No. 10 for last report.

71EB: *Canadian Radiation Network*

Principal Investigator: J.A.W. McCulloch - AES

See project 80EB.

72EB: *Floating Ice Research*

Principal Investigator: R.O. Ramseier - DOE, Ice

Two papers have resulted from this project; "Studies on the Extension of Winter Navigation on the St. Lawrence River" by R.O. Ramseier and D. Dickins, and "Navigation Season Extension Studies, Gulf of St. Lawrence to Great Lakes, Winter 1972-73", by D. Dickins.

73EB: *Terrestrial Heat Flow*

Principal Investigator: A. Judge - EM&R

Last reported in Bulletin No. 10.

74TW: *Water Level Network*

Principal Investigator: G.C. Dohler

An extensive report was included in Bulletin No. 12. This project has been terminated. The abstract of the paper, "Helmholtz Resonance in Harbours of the Great Lakes" is presented following, "Canadian Project Reports."

75BL: *Wind and Temperature Fluctuations*

Principal Investigators: S.D. Smith and E.C. Banks - Bedford Institute

This project was completed with the publication of: "Eddy Flux Measurements Over Lake Ontario" by S.D. Smith, Boundary Layer Meteorology, Vol. 6, pp. 235-255. Some additional comparison work may be undertaken when Niagara Bar data from Donelan (CCIW) and McBean (AES) are available.

76WM: *Surface Wave Studies*

Principal Investigator: G.L. Holland - MSD

This project is complete with all data archived at the Canadian IFYGL Data Bank.

78TW: *Basin Water Balance*

Principal Investigator: M. Sanderson - University of Windsor

This project has been cancelled.

79F: *Bathymetric Surveys of Lake Ontario*

Principal Investigator: T.D.W. McCulloch - CCIW

This project is complete.

80EB: *IFYGL Radiation Balance Program*

Principal Investigator: J.A. Davies - McMaster University

This project was completed with the publication of "Canadian Radiation Measurements and Surface Radiation Balance Estimates for Lake Ontario During IFYGL" by J.A. Davies and W.M. Schertzer. All data measurements have been submitted to the Data Bank.

81BC: *Materials Balance - Lake Ontario*

Principal Investigator: S. Salbach - OME

A comprehensive report was included in Bulletin No. 12.

82BC: *Lake Ontario Zooplankton Migration*

Principal Investigator: J.C. Roff - University of Guelph

Last reported in Bulletin No. 9. One paper, "Energetics of Vertical Migration in Mysis Loven 1862" by J.B. Foulds, has resulted from this project.

83BC: *Cooperative Studies of Fish Stocks*

Principal Investigator: W.J. Christie - OMNR

Last reported in Bulletin No. 12.

84BC: *Cladophora Growth*

Principal Investigator: G.E. Owen - OME

Data gathered during the Field Year are in the form of imagery. Data extraction from the imagery has been progressing slowly. All data and results will be presented in the final report on this project to be completed by late summer 1975.

85BC: *Nutrient Cycles - Lake Ontario*

Principal Investigator: A.S. Fraser - CCIW

A paper dealing with this project is in the final phase of preparation. An earlier paper has been published in the Proceedings, 17th Conference on Great Lakes Research" by P. Stadelmann and A.S. Fraser. The abstract follows, "Canadian Project Reports."

87EB: Included in Project 42EB.

89WM: *Turbulent Diffusion Studies*

Principal Investigator: C.R. Murthy - CCIW

A number of scientific papers resulted from this project and are listed in Bulletin 13, and included in the IFYGL Bibliography. For a complete project report, see Bulletin No. 11. A recent paper "Horizontal Diffusion Characteristics in Lake Ontario" was presented at the 18th Conference on Great Lakes Research in May, authored by C.R. Murthy. Another paper was published in the Proceedings, 17th Conference on Great Lakes Research, 1974 was "Vertical Mixing Characteristics in the Thermocline and Hypolimnion Regions of Lake Ontario." The abstract follows "Canadian Project Reports."

90WM: Included in Project 89WM.

94: *Data Retransmission by Satellite*

Principal Investigator: H. MacPhail - CCIW

The final report on this project is completed, and is entitled "Data Retransmission via satellite, Field Year 1972" authored by the Principal Investigator.

95WM: *Hydrodynamic Modelling*

Principal Investigator: T.J. Simons - CCIW

For a complete report see Bulletin No. 12. There were five scientific papers published from this project and they are listed in the Bibliography under the name of the Principal Investigator. This project is now complete.

96WM: Included in Project 45WM.

97BL: *Meteorological Buoy Measurements*

Principal Investigator: F.C. Elder - CCIW

This project is complete and all data have been submitted to the Data Bank. One paper entitled "The Evaluation of the Measurement Accuracy of the CCIW IFYGL Meteorological Buoy" authored by M.A. Donelan and F.C. Elder was presented at the 18th Conference on the Great Lakes.

98BC: *Lake Ontario Cross Section Study*

Principal Investigator: M. Munawar - CCIW

A paper resulting from this project was published in the Proceedings, 17th Conference on Great Lakes Research (IAGLR) 1974, entitled "The Abundance of Diatoms in the Southwest Nearshore Region of Lake Ontario During the Thermal Bar Period" by G.J. Lorefice and M. Munawar.

101BC: *Lake Ontario Primary Production Study*

Principal Investigators: M. Munawar and J.E. Moore

The project has been completed. The following papers have resulted from this project: "Biomass Parameters and Primary Production at a Nearshore and Midlake Station of Lake Ontario During IFYGL" by P. Stadelman and M. Munawar; "Phytoplankton Biomass, Its Species Composition and Primary Production at a Nearshore and Midlake Station of Lake Ontario During IFYGL" by M. Munawar, P. Stadelman and I.F. Munawar.

102BC: *Lake Ontario Diel Pigment Variation*

Principal Investigators: W. Glooschenko and M. Munawar - CCIW

This project is complete. The abstract of the final paper was included in Bulletin No. 12.

103BC: *Pesticide Concentration in Bird's Eggs*

Principal Investigator: M. Gilbertson - CWS

The project is continuing. Several papers have resulted to date and are listed in the IFYGL Bibliography under the Principal Investigator.

104BC: *Rain Quality Monitoring*

Principal Investigator: M. Shiomi - CCIW

No report available. See Bulletin No. 9 for last complete report.

107BL: *Air Pollution Sinks*

Principal Investigator: D.M. Whelpdale - AES

This project is complete. Two publications have resulted: "Sulphur Dioxide Removal by Turbulent Transfer Over Grass, Snow and Water Surfaces" by D.M. Whelpdale and R.W. Shaw; and "Sulphate Deposition by Precipitation into Lake Ontario" by R.W. Shaw and D.M. Whelpdale. Both are listed in the IFYGL Bibliography.

108BL: *Lake Level Transfer*

Principal Investigator: G.C. Dohler - MSD

This project has been terminated with several papers to be published.

109WM: *Upwelling Study*

Principal Investigator: G.K. Rodgers - CCIW

The Final Report is in preparation.

110WM: *Hydro Intake Study*

Principal Investigator: A. Arajs - OH

This project was completed with the paper "Nearshore Currents and Water Temperatures Along the North Shore of Lake Ontario Between Pickering and Cobourg" by A.A. Arajs and R. Faroqui. The abstract is presented following the portion, "Canadian Project Reports."

111WM: *Lakeview Dispersion Study*

Principal Investigator: M.D. Palmer - OME

This project is complete, and all the data have been submitted to the IFYGL Data Bank.

112BC: *Threespine Stickleback*

Principal Investigator: E.T. Garside - Dalhousie University

No report available. Last reported in Bulletin No. 9.

114WM: Included in Project 89WM.

115WM: *Wave Climatology*

Principal Investigator: H.K. Cho - CCIW

The data have been submitted to the Data Bank.

116TW: *Airborne Gamma Ray Snow Survey*

Principal Investigator: H.S. Loijens - IWD, Glaciology

The project was last reported in Bulletin No. 9. The project has been terminated; however, research in the use of natural gamma radiation for snow-water equivalent and soil moisture determination is continuing.

117ME: *APT Photographs*

Principal Investigator: J.A.W. McCulloch - AES

This project is now completed. The microfilm is on file at the IFYGL Data Bank.

118: *Canadian IFYGL Data Bank*

Principal Investigator: J. Byron - CCIW

Cat. No. 3-118-041	IFYGL Bulletin No. 14
Cat. No. 3-118-042	Canadian Interim IFYGL Data Catalogue.

CANADIAN IFYGL DATA MANAGEMENT REPORT

Interim - Canadian IFYGL Data Catalogue

The purpose of this catalogue is to provide Canadian Principal Investigators with a means of identifying data which are available from the archive. It does not contain all the data within the Canadian and U.S. IFYGL Data Banks, but only those data which have been submitted from Canadian P.I.'s.

A FINAL - Canadian IFYGL Data Catalogue will be produced sometime after December 31, 1975. It is hoped that data from all Canadian projects will be filed in the archive at this time.

This catalogue contains information on:

1. the project supplying the data
2. the panel which that project belonged to
3. a description of the data
4. the archive which the data may be obtained from
5. the IFYGL catalogue number which has been assigned to each particular piece of data as a distinctly identifying number for filing and retrieval purposes.

All data within the Canadian IFYGL Data Bank are available on a "LOANER" basis. In some cases a minimal charge may be required to pay for external processing, i.e., keypunching, copying magnetic tapes, etc.

Anyone interested in acquiring data from the Canadian IFYGL Data Bank, may do so by contacting Mr. James Byron at any time. It would be appreciated if you would use the correct catalogue number for any data that you require.

Canadian IFYGL Data Bank,
Canada Centre for Inland Waters,
867 Lakeshore Rd., P.O. Box 5050,
BURLINGTON, Ontario L7R 4A6.
(416) 637-4324

Canadian Hydrology Symposium

The Canadian National Committee for the International Hydrological Decade held a final symposium in Winnipeg, Man. August 11-14, 1975, in which speakers reviewed progress made in Canadian hydrology during the IHD. While IFYGL was not reported on "in toto", it received a degree of emphasis by the chairman and three papers covering specific portions of the IFYGL program were presented. The following are the abstracts of these papers:

OPERATIONAL USES OF REGIONAL WATER BALANCES IN THE LAKE ONTARIO BASIN

D.F. Witherspoon
Environmental Management Service
Cornwall, Ontario

The water balance of Lake Ontario has been used for the study of water supplies to Lake Ontario since regulation of the lake has been considered. These studies have led to the development of a relatively representative period of record of the hydrologic elements of the water supply to the lake. Measurements of the lake water balance made during the International Field Year for the Great Lakes (IFYGL) are compared with this long term record. The lake water balance combined with the water balance for the land area is used to develop a regional model for the Lake Ontario basin which can be used to forecast water supplied to the lake for use in regulation decision making or to simulate water supplies to the lake for use in regulation plan development.

PRECIPITATION ESTIMATES BY RADAR DURING IFYGL

W.D. Hogg and D.M. Pollock
Atmospheric Environment Service
Downsview, Ontario

The use of radar as a means of measuring precipitation is discussed. The advantages and problems of the radar as a precipitation gauge are outlined and the use of precipitation gauge networks to overcome some of the problems, is examined. Both the radar and the extensive precipitation gauge networks operated for IFYGL are used to obtain daily precipitation values for the Lake Ontario drainage basin on a grid square basis. Using the rainstorms of June 21 and July 15, 1972 as examples, the advantages of employing both radar and gauges when estimating areal precipitation are demonstrated.

THE IFYGL EVAPORATION PROGRAM

J.A.W. McCulloch
Atmospheric Environment Service
Downsview, Ontario

A major thrust of IFYGL was towards evaporation from a large lake. In the planning of the total program, it was envisaged that evaporation estimates would be made:

(1) as a residual in the water balance of the lake;

(2) as a residual in the energy balance of the lake;

(3) using bulk aerodynamic approaches, first using data from the surrounding land basin, and then using the vast amounts of overwater data;

(4) from standard and experimental evaporation-pan observations surrounding the lake, taking into account changes in the heat content of the lake itself;

(5) through calculation of the atmospheric energy budget, then estimating the moisture flux divergence of the air over the lake;

(6) through micrometeorological observations and calculations.

The first four were year-round programs. The fifth was carried out during the autumn of 1972, primarily in three "intensive" periods separated by intervals of lower activity. The last as is customary in micrometeorological studies, occurred in brief bursts throughout the "field" year.

This presentation will briefly describe each approach and some preliminary results. The Evaporation Synthesis task which will attempt to rationalize the results of the individual approaches will also be discussed.

IFYGL ABSTRACTS

Ten Canadian IFYGL papers were recently published in the first volume of the Proceedings, 17th Conference on Great Lakes Research (IAGLR), August, 1974. Abstracts of four of these papers appeared in the IFYGL Bulletin No. 12, and the remaining six are presented in this issue.

TURBULENT KINETIC ENERGY BALANCE NEAR THE FROZEN SURFACE OF EASTERN LAKE ONTARIO

C. Subbarao Maddukuri and William R. Frisken
(IFYGL Project 28BL)

During February and March of 1973, direct measurements were made of turbulent fluxes of momentum and heat in the boundary layer using an ultrasonic anemometer (Kaijo-Denki PAT 311) mounted 2.67 m above the ice surface. These data were used to compute the kinetic energy balance in the boundary layer over the frozen water surface of Lake Ontario.

Integrated statistics obtained in this study show that the nature of the turbulence is similar to that observed at other sites over land and water. However, a plot of $(\sigma_w/\sigma_u)^2$ against the stability parameter (Z/L) does not show any rapid transition as stability changes from stable to unstable.

The values of various terms in the equation for the turbulent kinetic energy budget computed from the data are significantly less than those reported for studies over land and water surfaces. This is due to the smoothness of the ice surface and the light winds prevailing during the experiment. For nearly neutral conditions the local production of turbulent energy is balanced by the local dissipation, in agreement with others. For unstable and slightly stable conditions the dissipation is not balanced by production. Very stable cases are not considered because of considerable anisotrophy.

HELMHOLTZ RESONANCE IN HARBOURS OF THE GREAT LAKES

N.G. Freeman, P.F. Hamblin and T.S. Murty
(IFYGL Project 74TW)

Helmholtz resonance basically represents the balance between the kinetic energy of the water flowing in through a narrow connecting channel, and the potential energy from the rise in mean water level within the harbour. It is an additional gravitational mode of substantially longer period than the fundamental free oscillation and can be significant in the contamination of spectra of water levels collected in harbours and in the consideration of harbour flushing times. Theoretical estimates for the Helmholtz periods for an idealized multi-channel basin are computed by means of a multi-degree of freedom resonator and for a more realistic geometry by means of a numerical model. Power spectral analysis of water

level records measured during the IFYGL study compare favourably with the theoretical predictions for the Toronto and Hamilton harbours. The Helmholtz resonator model is less satisfactory in dealing with bays with complicated entrance geometry and it is demonstrated that a co-oscillation model is more appropriate.

PHOSPHORUS AND NITROGEN CYCLE ON A TRANSECT IN LAKE ONTARIO DURING THE INTERNATIONAL FIELD YEAR 1972-1973

P. Stadelmann and A. Fraser
(IFYGL Project 85BC)

The horizontal and vertical distribution of nutrients such as orthophosphate (soluble reactive phosphorus) and nitrate and their conversion to organic material using particulate P and particulate organic N as biomass indicators are presented for Lake Ontario. The biochemical reaction occurring in the lake is described during deep circulation, thermal bar development stratification and the beginning of fall overturn in a transect at 78°W longitude. Maxima of particulate organic N (230 µg PON/ℓ), particulate P (20 µg PP/ℓ) and chlorophylla (17 µg/ℓ) occurred at a depth of 10 m in July. Phosphorus and nitrate concentrations decreased from 13 µg SRP/ℓ and 250 µg NO_3-N/ℓ during deep circulation to 1 µg SRP/ℓ and 5 µg NO_3-N/ℓ during the stratified period. A simplified P and N balance for a mid-lake station demonstrated that significant amounts of nutrients are recycled in the epilimnion. This recycling of nitrogen and phosphorus is in the order of 81% of the primary production rate expressed as a nitrogen uptake rate and 93% of the production rate expressed as a phosphorus uptake rate. With the inclusion of loading data these percentages are reduced to 69% and 87% of the nitrogen and phosphorus uptakes rates, respectively. During lake wide stratification (July to September) sedimentation of P and N out of the epilimnion was estimated to be approximately 0.14g P/m^2 and 3.3g N/m^2.

VERTICAL MIXING CHARACTERISTICS IN THE THERMOCLINE AND HYPOLIMNION REGIONS OF LAKE ONTARIO

G. Kullenberg, C.R. Murthy and H. Westerberg
(IFYGL Project 89WM)

The instantaneous point-source, sub-surface dye diffusion experiments carried out during the IFYGL are used to study the small-scale vertical mixing in relation to the vertical temperature, and current structure. The experiments covered time scales from 5 to 80 hours as well as a wide range of environmental conditions.

The dye tracing was done by towing an in situ fluorometer equipped with a thermistor over the area. The response of the instrument is rapid and the vertical resolution is of the order of centimeters. The signals were recorded continuously on a strip-chart recorder on board. The instrument was usually operated in a cyclic mode covering a given depth

interval so that the three-dimensional dye distribution could be determined. In connection with the dye tracing, environmental data on the current and temperature distributions were obtained regularly.

In the vertical direction the dye distribution exhibits a layered structure which apparently is related to the density and current structures in the water column. Several types of dye layers are observed, e.g. pulse-formed layers with sharp boundaries, layers with ragged boundaries, leaf-structures, and step-formed layers. The close relation between the dye distribution and the small-scale temperature structure is shown, and possible layer generating mechanisms are discussed, such as advective processes, wave generated overturning instabilities and shear instabilities. It is quite clear that a layered distribution observed here must be reckoned with when the dispersion of a passive contaminant in sub-surface waters is discussed.

The role of various possible vertical mixing processes is discussed. The significance of the vertical current shear is demonstrated, and the shear instability is suggested to be an important vertical mixing processes in the thermocline and hypolimnion regions.

The effective vertical mixing coefficient, as determined by means of the dye profiles, is found to vary considerably. It falls in the range 0.01-0.5 cm^2/sec. The persistency of the dye layers alone shows that the mixing can be extremely weak. The results furthermore suggest that the mixing depends upon the density stratification, the vertical current shear, and the fluctuating kinetic energy. A relationship to this effect is suggested based on Lake Ontario and oceanic data.

The energy dissipation per unit mass and time is estimated by means of the dye profiles at depths around 30 m. It is found to be of the order of 6.10^{-5} cm^2/sec^3. This value is one to two orders of magnitude smaller than values reported from corresponding depths in the ocean. In view of the weak diffusion found in the lake compared to that in the ocean this result seems reasonable.

BIOMASS PARAMETERS AND PRIMARY PRODUCTION AT A NEARSHORE AND A MIDLAKE STATION OF LAKE ONTARIO DURING IFYGL

P. Stadelman and M. Munawar
(IFYGL Project 101BC)

The seasonal variation of particulate organic carbon (POC) and nitrogen (PON), particulate phosphorus (PP), Chl. a, adenosine triphosphate (ATP) and phytoplankton biomass was investigated at a nearshore and a midlake station in Lake Ontario during IFYGL. Photosynthesis rates using the ^{14}C technique were measured on two consecutive days at each station and related to the various biomass parameters.

At the nearshore station, the mean concentrations (in the 0-10 m zone) of various biomass parameters varied from 130-960 POC mg/m^3, 20-180 PON mg/m^3, 1.5-13.5 PP mg/m^3, 0.7-9.8 Chl. a mg/m^3, 0.07-0.81 ATP mg/m^3 and 220-2800 algal biomass mg/m^3, respectively. High values were shown by all the parameters in June and July.

The midlake station showed a lag in biomass increase during spring and the maximum were observed later in July and September. The concentrations ranged between 80-720 POC mg/m^3, 10-140 PON mg/m^3, 2.1-10.6 PP mg/m^3, 0.9-8.5 Chl. a mg/m^3, 0.03-1.85 ATP mg/m^3 and 200-1700 algal biomass mg/m^3.

On comparing averaged values the nearshore station showed approximately 50% more POC, PON, PP and Chl. a and 100% more phytoplankton biomass, whereas both stations exhibited similar ATP values. Carbon turnover rates were computed for depth where maximum daily photosynthesis was observed, using sestonic carbon (POC), algal carbon (phytoplankton biomass x 0.1) and living carbon (ATP x 250). The turnover rates at the midlake station varied between 0.04-0.46 day^{-1} and 0.37-1.92 day^{-1} and 0.35-1.99 day^{-1} based on POC, phytoplankton biomass and ATP, respectively. The corresponding values for the nearshore station ranged between 0.08-0.38, 0.49-2.71 and 0.79-2.89 day^{-1}.

The comparison of various biomass parameters determined in this study indicated that a significant amount of detritus is present over the entire year at both stations.

NEARSHORE CURRENTS AND WATER TEMPERATURES ALONG THE NORTH SHORE OF LAKE ONTARIO BETWEEN PICKERING AND COBOURG

A.A. Arajs and Riaz Faroqui
(IFYGL Project 110WM)

In 1972 as part of Ontario Hydro's contribution to IFYGL and also in continuation of its hydrologic and environment studies, a program of lake current and water temperature measurements was carried out at four sites along a 100 km stretch of the north shore of Lake Ontario between Toronto and Cobourg. Current and temperature recorders were installed at various depths within a band of 2 km offshore and maintained from April to November. Results indicate that water movement was predominantly longshore at all locations. Resultant transport was westward at all sites except Pickering. Maximum current speeds were in the order of 30 cm/sec. Water temperatures indicated similarity at all sites; surface warming in spring, complete stratification including up-and-down-welling in summer and isothermal conditions in fall.

UNITED STATES

Editors Fred Jenkins and May Laughrun

Typing Ann Hanks

COMMENTS BY THE U.S. DIRECTOR

This issue covers progress from April 1 through June 30, 1975 (fig. 1). Of the 78 U.S. IFYGL tasks, 29 had been completed or terminated by the end of that quarter. Final reports on several other tasks are in preparation.

The IFYGL Joint Management Team and Joint Steering Committee met in Albany, N.Y., on May 22. Schedules for, and contents of, the summary scientific reports covering the work by the IFYGL panels were discussed. Attention was also given to a "wrap-up" workshop, to take place in October 1977, where the IFYGL program will be critically reviewed and the experience gained summarized for the benefit of planning for future major field programs in the Great Lakes.

The IFYGL Archive is nearing completion. An updated list of its contents is included in the Data Management section of this Bulletin.

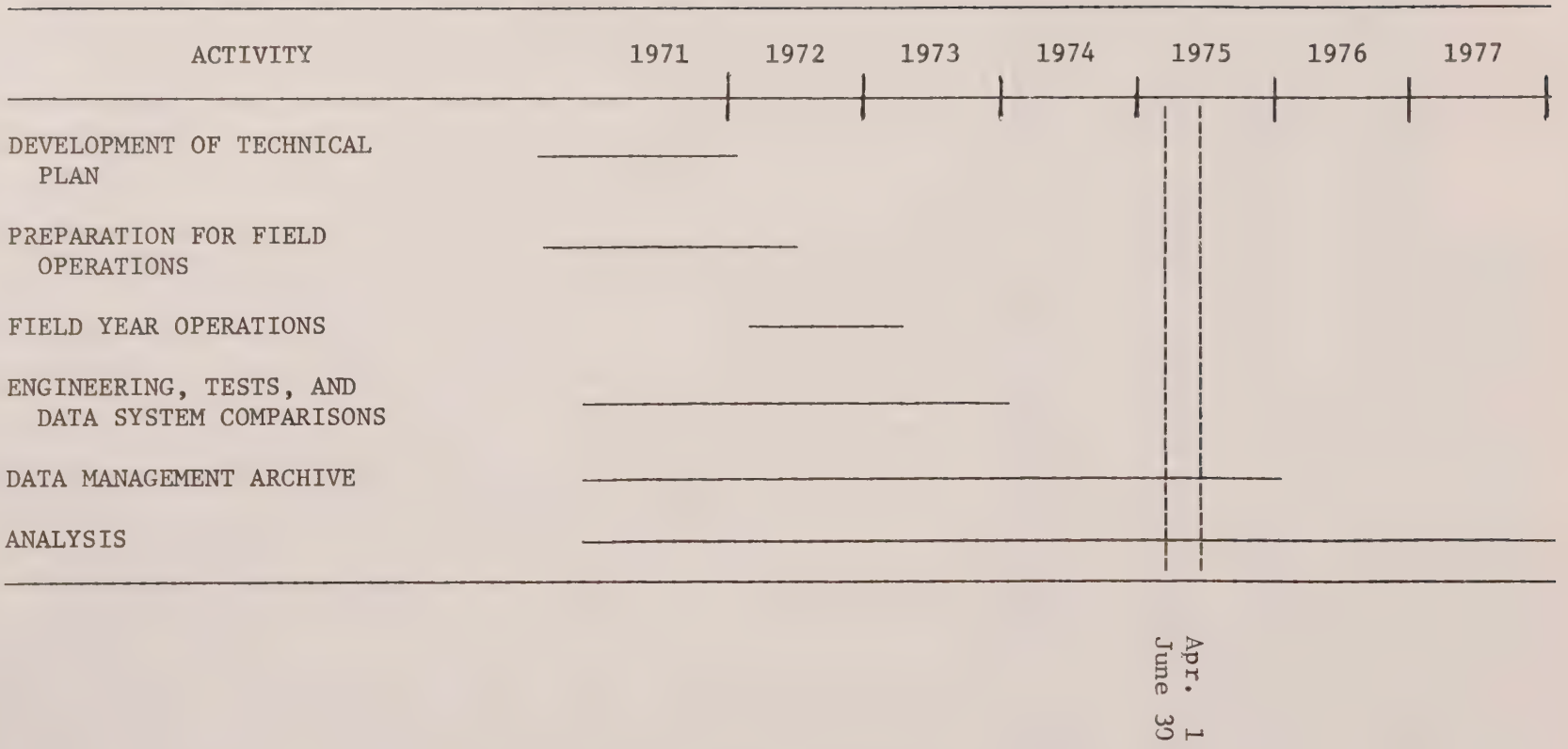

Figure 1.--U.S. IFYGL schedule.

ON THE SELECTION OF REPRESENTATIVE STATIONS FOR THIESSEN POLYGON NETWORKS TO ESTIMATE LAKE ONTARIO OVERWATER PRECIPITATION

S. J. Bolsenga and John C. Hagman
Great Lakes Environmental Research Laboratory
Ann Arbor, Michigan

The use and limitations of the Thiessen polygon method to estimate precipitation amounts are well known. A polygon network adjusts for an other-than-uniform geographical distribution of stations by developing a weighting factor based on percent of total basin area nearest each station. The weighting factor is then applied to the corresponding precipitation observations. Thus, improvements over a simple mean are achieved. Unfortunately, the Thiessen procedure is often employed without giving adequate consideration to the selection of stations used to construct the polygon network. This note describes a situation on Lake Ontario where incorrect station selection would result in a bias in precipitation values calculated from polygon networks constructed using shoreline stations. Where non-linear interpretation is desirable, such as in areas of great topographic relief, an isohyetal analysis is preferable.

Determining amounts of precipitation over large bodies of water, where direct measurements are unavailable, is of interest to certain investigators who have participated in the International Field Year for the Great Lakes (IFYGL). The Thiessen polygon procedure for dividing the lake surface on the basis of available shoreline stations is one of the various methods employed to estimate precipitation over the lake during IFYGL in addition to techniques developed from island data and digitized weather radar. This note describes the differences in monthly precipitation over Lake Ontario generated from two polygon networks over a 2-year period, including IFYGL.

Both networks used stations within the basin and as close to the shoreline as possible. The first was composed of 26 stations as shown in figure 2. Monthly data computed for the lake using weighting factors from the 26-station network are shown in table 1.

During the course of construction of the polygons for the 26-station network, some serious objections were raised as to possible misrepresentation of conditions over the lake due to three of the stations on the U.S. side of the basin. The stations, identified by the circled dots in figure 2, are farther inland than the others. Other stations in the network were close to the shoreline and it was felt that the overall monthly value might be biased more towards a figure for basin rather than overlake precipitation by including these stations.

Accordingly, a new 23-station network was constructed, eliminating the three stations in question (fig. 3). Data from that network are also included in table 1. It is obvious from an examination of the monthly data that systematic differences exist between the 23- and 26-station network values. Figure 4 shows these differences (26-gage network minus 23-gage network) for the time period considered. From October through April, the 23-gage network recorded higher values than the 26-gage network. During the remaining months, the reverse situation was true. The differences during the colder months are most likely due to lake effect storms although some of the areas from which the stations were deleted are not well known for such events. During the warmer months, the higher values from the 26-station network could be due to the suppression of convective showers by the lake.

A short, intensive period of measurement was conducted for IFYGL in the fall of 1972. Daily measurements were computed for that period, and the differences between the values for the two networks are also shown in table 2.

A larger data base is necessary to verify the systematic differences shown in figure 4. However, the anomalies found indicate that a great deal of care must by exercised in selecting stations used in a polygon network to estimate precipitation over large lakes.

Table 1.--Monthly lake precipitation totals

Month	26-station network		23-station network	
	1972	1973	1972	1973
January	2.11	1.52	2.16	1.60
February	3.37	1.89	3.41	2.03
March	3.34	3.95	3.46	4.24
April	2.61	4.18	2.66	4.22
May	3.48	3.27	3.39	3.24
June	4.48	2.32	4.29	2.18
July	2.76	1.86	2.71	1.82
August	3.71	1.19	3.62	1.19
September	2.94	2.19	2.89	2.11
October	3.24	4.02	3.24	4.12
November	4.23	3.57	4.33	3.64
December	4.48	4.31	4.62	4.36

Table 2.--Daily lake precipitation totals

November 1972	26-station network	23-station network
1	0.27	0.28
2	0.28	0.28
3	0.01	0.00
4	0.15	0.15
5	0.00	0.00
6	0.00	0.00
7	0.83	0.84
8	0.77	0.82
9	0.01	0.01
10	0.05	0.04
11	0.06	0.06
12	0.00	0.00
13	0.13	0.11
14	0.22	0.20
15	0.00	0.00

Figure 2.--The 26-station network and associated polygons

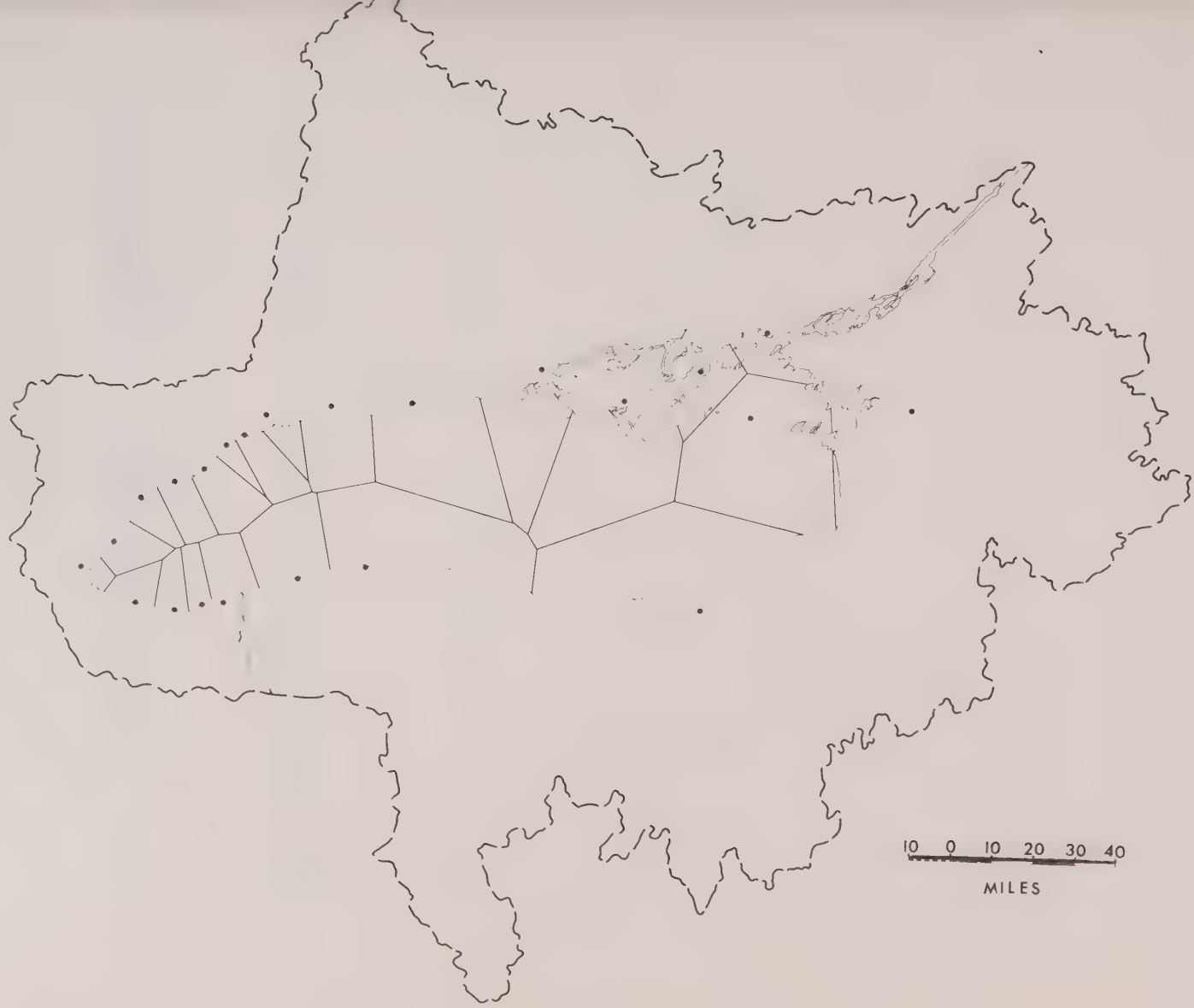

Figure 3.--The 23-station network and associated polygons.

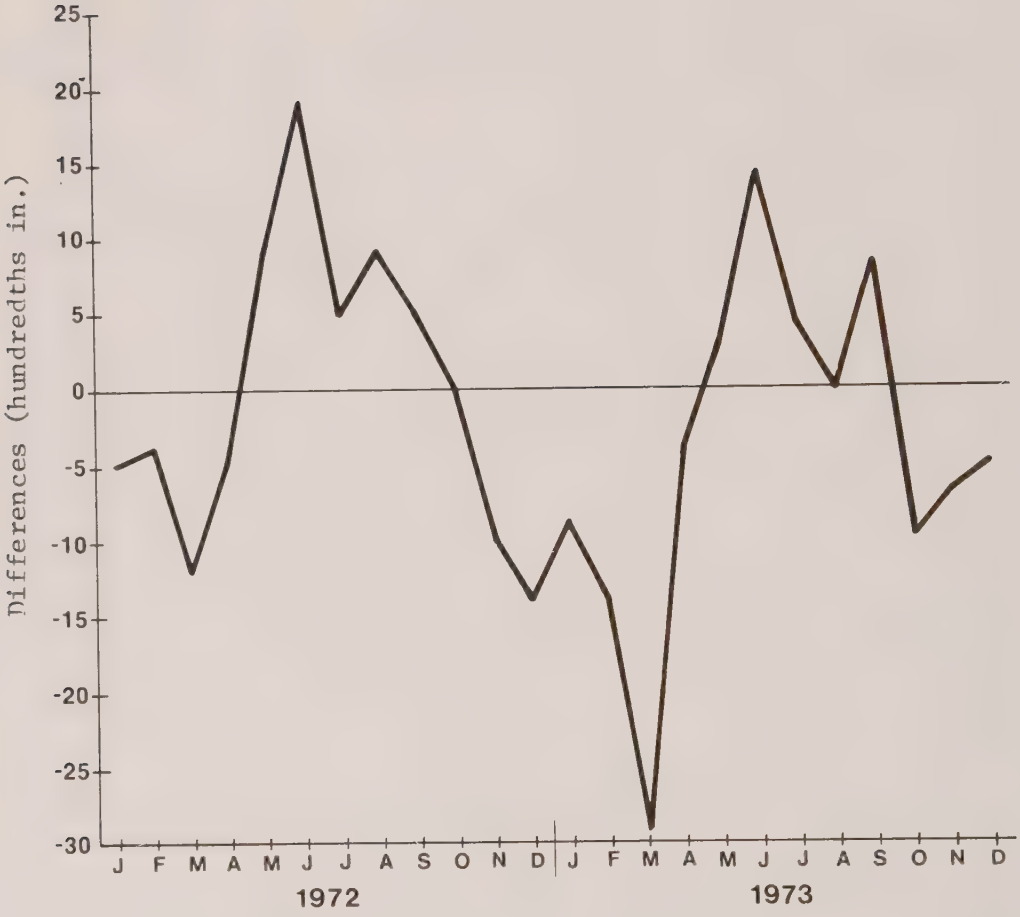

Figure 4.--Differences in computed overlake precipitation (26-station network minus 23-station network).

U.S. SCIENTIFIC PROGRAM

Based upon reports requested by the U.S. IFYGL Project Office, the progress from April 1 through June 30, 1975, is presented for each of the U.S. IFYGL tasks. Some reports cover work done in July and August.

Tasks

1. *Phosphorus Release and Uptake by Lake Ontario Sediments*

   Principal Investigators: D. E. Armstrong and R. F. Harris - University of Wisconsin

   Task completed.

2. *Net Radiation*

   Principal Investigator: M. A. Atwater - CEM

   Task completed.

3. *RFF/DC-6 Boundary Layer Fluxes*

   Principal Investigator: B. R. Bean - ERL/NOAA

   Task completed.

4. *Nitrogen Fixation*

   Principal Investigator: R. Burris - University of Wisconsin

   Task completed.

5. *Profile Mast and Tower Program*

   Principal Investigator: J. A. Businger - University of Washington

   No report.

6. *Status of Lake Ontario Fish Populations*

   Principal Investigator: J. H. Kutkuhn - Great Lakes Fisheries Laboratory

   The final report is in preparation.

7. *Material Balance of Lake Ontario*

   Principal Investigator: D. J. Casey - EPA

   No report.

8. *Runoff*

Principal Investigator: L. T. Schutze - U.S. Army Corps of Engineers

Task completed.

9. *Evaporation (Lake-Land)*

Principal Investigator: L. T. Schutze - U.S. Army Corps of Engineers

No progress this quarter.

10. *Simulation Studies and Analyses Associated With the Terrestrial Water Balance*

Principal Investigator: B. G. DeCooke - U.S. Army Corps of Engineers

Activity has not begun.

11. *Land Precipitation Data Analysis*

Principal Investigators: L. T. Schutze and R. Wilshaw - U.S. Army Corps of Engineers

No progress this quarter.

12. *Transport Processes Within the Rochester Embayment of Lake Ontario*

Principal Investigator: J. H. Thomas - University of Rochester

Task completed.

13. *Soil Moisture and Snow Hydrology*

Principal Investigator: W. N. Embree - U.S. Geological Survey

Work on the final report still in progress.

14. *Boundary Layer Structure and Mesoscale Circulation*

Principal Investigator: M. A. Estoque - University of Miami

See Task 15 below.

15. *Mesoscale Simulation Studies*

Principal Investigator: M. A. Estoque - University of Miami

Progress has been made in incorporating the effects of cumulus convection and planetary boundary layer processes into the three-dimensional model.

Three reports on this task will be written: (1) "The Lake Breeze Over Southern Lake Ontario on October 3, 1972," (2) "Dependence of the Lake Breeze Over Southern Lake Ontario on Synoptic Conditions," and (3) "Diurnal Variations of Wind, Temperature, and Moisture Over the Coasts of Lake Ontario."

16. *Water Transfer Across Large Lake*

Principal Investigator: H. W. Stoughton - State University of New York at Alfred

Precise water-level data for the perimeter of Lake Ontario have been tabulated and are being analyzed. A tape containing meteorological data from the U.S. sensors has been received from NCC, and a literature search has been made on the state-of-the-art of water-level transfer techniques.

Evaluation of meteorological and hydrological effects on water levels will begin in September. The probable accuracy to be expected of level data will be evaluated from both theoretical and practical viewpoints.

17. *Nearshore Ice Formation, Growth, and Decay*

Principal Investigator: J. Dilley - General Electric Company

Physical phenomena being studied for possible inclusion in the simulation model to improve its accuracy are waves, precipitation (including an insulating snow cover), and convective and advective water motion. Work is also being done on refining the numerical scheme that computes the motion of the freezing and melting phase fronts. Higher quality radiation flux data and satellite data showing ice cover are being requested.

After the model has been improved, simulations of the ice periods during the winter of 1972-73 will be run and compared with the field data in order to evaluate the model's accuracy. Also, the shore model, as well as a deepwater ice model, will be applied to several locations around the lake to estimate the contribution of ice formation, growth, and decay to the whole lake budget.

18. *Advection Term - Energy Balance*

Principal Investigator: J. Grumblatt - LSC/NOAA

A data file of daily heat inflow-outflow is complete, and a file containing estimated weekly heat flow for Lake Ontario shoreline areas will be assembled next quarter pending receipt of data from other principal investigators. Estimated completion date for the final report is January 1976.

19. *Occurrence and Transport of Nutrients and Hazardous Polluting Substances in the Genesee River Basin*

Principal Investigator: L. J. Hetling - New York State Department of Environmental Conservation

Task completed.

20. *Boundary Layer Flux Synthesis*

Principal Investigator: J. A. Almazan - CEDDA/NOAA

A merged data set, consisting of hourly averages of the meteorological data from the United States and Canadian buoy and tower networks has been placed in the IFYGL Archive. The weekly statistical summaries of these data are almost complete. They list, by station, for each week from May through October 1972, the mean value, standard deviation, and number of hourly averages for air temperature at 3 m, lake surface temperature, wind speed, wind components, and specific humidity. Interpretations of some of these summaries will be included in the final product.

"A Comparison of the U.S. and Canadian Meteorological Buoy Data During IFYGL," a paper by R. Hovanec and J. A. Almazan presented at the 18th Conference on Great Lakes Research in May, will be submitted for publication in the new Journal of Great Lakes Research.

21. *Hazardous Material Flow*

Principal Investigator: G. F. Lee[1] - University of Texas at Dallas

Final report in preparation.

22. *Remote Measurement of Chlorophyll With Lidar Fluorescent System*

Principal Investigator: H. H. Kim - NASA

Task completed.

23. *Inflow/Outflow Term - Terrestrial Water Budget*

Principal Investigator: P. L. Cox - U.S. Army Corps of Engineers

Task completed.

24. *Use of an Unsteady State Flow Model To Compute Continuous Flow*

Principal Investigator: P. L. Cox - U.S. Army Corps of Engineers

No progress this quarter.

25. *Radiant Power, Temperature, and Water Vapor Profiles Over Lake Ontario*

Principal Investigator: P. M. Kuhn - ERL/NOAA

Work completed.

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[1]G. F. Lee has replaced T. Davies as Principal Investigator

26. *Algal Nutrient Availability and Limitation in Lake Ontario*

Principal Investigator: G. F. Lee - University of Texas at Dallas

A draft of the final report has been submitted to the EPA Grosse Ile Laboratory.

27. *Wave Studies*

Principal Investigator: P. C. Liu - GLERL/NOAA

Detailed analyses of Lake Ontario wave spectra recorded during IFYGL are continuing. A data report entitled "Surface Wave Data Recorded in Lake Ontario During IFYGL," which will be published as a NOAA Technical Memorandum, is in press. A paper on "Duration-Limited Wave Spectra in Lake Ontario During the 1972 Hurricane Agnes" has been published in the Proceedings of the 17th Conference on Great Lakes Research (Vol. 1, pp. 435-444), and another paper, "IFYGL Ship Wave Observations vs. Wave Measurements," which was presented at the 18th Conference on Great Lakes Research in Albany, N.Y., will be submitted for publication in Journal of Great Lakes Research.

28. *Cloud Climatology*

Principal Investigator: W. A. Lyons - University of Wisconsin, Milwaukee

No report.

29. *Zooplankton Production in Lake Ontario as Influenced by Environmental Perturbations*

Principal Investigator: D. C. McNaught - State University of New York at Albany

Task completed.

30. *Change in Lake Storage Term - Terrestrial Water Budget*

Principal Investigator: R. Wilshaw - U.S. Army Corps of Engineers

No progress during this quarter.

31. *Soil Moisture*

Principal Investigator: L. T. Schutze - U.S. Army Corps of Engineers

Work not begun.

32. *Testing of COE (Corps of Engineers) Lake Levels Model*

Principal Investigator: E. Megerian - U.S. Army Corps of Engineers

This task has been canceled.

33. *Nearshore Study of Eastern Lake Ontario*

Principal Investigator: R. B. Moore - State University of New York at Oswego

Task completed.

34. *Internal Waves - Transects Program - Interpretation of Whole-Basin Oscillations*

Principal Investigator: C. H. Mortimer - University of Wisconsin, Milwaukee

No report.

35. Pontoporeia affinis *and Other Benthos in Lake Ontario*

Principal Investigator: S. C. Mosley - University of Michigan

No report.

36. *Pan Evaporation Project*

Principal Investigators: C. N. Hoffeditz - NWS/NOAA
J. A. W. McCulloch - AES, Canada

No progress this quarter.

37. *Simulation Studies and Other Analyses Associated With U.S. Water Movements Projects*

Principal Investigators: J. P. Pandolfo and C. A. Jacobs - CEM

Task completed.

38. *Structure of Turbulence*

Principal Investigator: H. A. Panofsky - Pennsylvania State University

Task completed.

39. *Airborne Snow Reconnaissance*

Principal Investigator: E. L. Peck - NWS/NOAA

Task completed.

40. *Optical Properties of Lake Ontario*

Principal Investigator: K. R. Piech - Calspan Corporation

No report.

41. *Storage Term - Energy Balance Program*

Principal Investigator: A. P. Pinsak - GLERL/NOAA

This task effort continues to wait on availability of IFYGL ship data. Comparison of heat storage estimates based on ship and on buoy data indicates that location of the buoy network precludes a usable heat storage estimate during unstable periods although the network is adequate when the lake is stable.

42. *Sensible and Latent Heat Flux*

Principal Investigator: A. P. Pinsak - GLERL/NOAA

Various time and spatial averaging techniques have been tested to determine their effect on the Bowen ratio. A program to determine daily values has been prepared and will be applied when data becomes available.

43. *Thermal Characteristics of Lake Ontario and Advection Within the Lake*

Principal Investigator: A. P. Pinsak - GLERL/NOAA

This task is related to Task 41 and is inactive pending availability of IFYGL ship data.

44. *Oswego Harbor Studies*

Principal Investigator: G. L. Bell - GLERL/NOAA

In Bulletin No. 14, station numbers given on p. 63 and in table 2 on p. 64 were incorrect. The stations are 1, 3, and 4; not 1, 2, and 3. The second column in table 2 contains data for station 3; the third column, data for station 4.

The change in computer systems has presented some problems, and a new data tape is being prepared for the IFYGL Archive. The final report is still in preparation.

45. *Mapping of Standing Water and Terrain Conditions With Remote Sensor Data*

Principal Investigator: F. C. Polcyn - ERIM

Task completed.

46. *Remote Sensing Program for the Determination of* Cladophora *Distribution*

Principal Investigators: F. C. Polcyn and C. T. Wezernak - ERIM

Task completed.

47. *Remote Sensing Study of Suspended Inputs Into Lake Ontario*

Principal Investigators: F. C. Polcyn and C. T. Wezernak - ERIM

Task completed.

48. *Island-Land Precipitation Data Analysis*

Principal Investigator: F. H. Quinn - GLERL/NOAA

Precipitation data from the tower and island stations have been reviewed and documentation is underway.

Multiple linear regression screening techniques are being applied for developing equations to indicate total U.S. basin precipitation from a few key stations. Data from NOAA Technical Memorandum ERL GLERL-1, "Lake Ontario Basin: Overland Precipitation 1972-73," are used as being representative of the total U.S. basin precipitation for this purpose.

49. *Lake Circulation, Including Internal Waves and Storm Surges*

Principal Investigator: D. B. Rao - GLERL/NOAA

No progress during this quarter.

50. *Atmospheric Water Balance*

Principal Investigator: E. M. Rasmusson - CEDDA/NOAA

The results of water budget computations for the second period of intensive observations (October 30 to November 14, 1972) were presented at the 18th Conference on Great Lakes Research in May. Lake-averaged evaporation for this period ranged from 5.1 to 5.8 mm/day depending on the precipitation estimate used (gage alone or gage plus radar). Preliminary results of water budget computations for the first intensive period (October 2 to October 18, 1972) indicate a higher evaporation rate than that obtained for the second period, a qualitative trend also evident in McCulloch's evaporation estimates. Our computer program now splits all derived quantities into a mean contribution plus eddy terms (time average).

An error in computed specific humidities for all three intensive periods (the third covering November 21 to December 10, 1972) was identified and corrected. The saturation vapor pressure with respect to ice rather than water had been used for temperatures below 0°C. The correction raised the computed evaporation rate for the second intensive period by approximately 0.3 mm/day.

During the next quarter the budget results for the first period will be subjected to closer scrutiny and analysis of data from the third, and last, period will be started. An attempt will be made to use the asymptotic singular decomposition (ASD) scheme to generate an improved method for interpolating missing data. A mathematical property of the ASD technique is being

investigated that may make it possible to better determine and more effectively eliminate the random noise from the data with minimum attenuation of the signal.

NOAA Technical Memorandum EDS CEDDA-4, "Preliminary Report on Wind Errors Encountered During Automatic Processing of IFYGL LORAN-C Data," published in May, gives an indication of the amount of manual effort needed during the "automatic" processing of IFYGL wind data.

51. *Evaporation Synthesis*

Principal Investigator: F. H. Quinn - GLERL/NOAA

First-cut evaporation data continue to be generated by the various investigators involved.

52. *Groundwater Flux and Storage*

Principal Investigator: E. C. Rhodehamel - U.S. Geological Survey

Task completed.

53. *Spring Algal Bloom*

Principal Investigator: A. Robertson - GLERL/NOAA

This task has been canceled.

54. *Ice Studies for Storage Term - Energy Balance*

Principal Investigator: F. H. Quinn - GLERL/NOAA

Task completed.

55. *Lagrangian Current Observations*

Principal Investigator: J. H. Saylor - GLERL/NOAA

Compilation of data for the final report continued. A report on the spring thermal bar investigations is nearing completion.

56. *Circulation of Lake Ontario*

Principal Investigator: J. H. Saylor - GLERL/NOAA

No activity this quarter.

57. *Phytoplankton Nutrient Bioassays in the Great Lakes*

Principal Investigator: C. Schelske - University of Michigan

Task not activated.

58. *Runoff Term of Terrestrial Water Budget*

Principal Investigator: G. K. Schultz - U.S. Geological Survey

Task completed.

59. *Coastal Chain Program*

Principal Investigator: J. T. Scott - State University of New York at Albany

No report.

60. *Analysis of Phytoplankton Composition and Abundance*

Principal Investigator: E. F. Stoermer - University of Michigan

Task completed.

61. *Clouds, Ice, and Surface Temperature*

Principal Investigator: A. E. Strong - NESS/NOAA

No report.

62. *Analysis and Model of the Impact of Discharges From the Niagara and Genesee Rivers on Nearshore Biology and Chemistry*

Principal Investigator: R. A. Sweeney - State University of New York at Buffalo

Task completed.

63. *NCAR/DRI - Buffalo Program*

Principal Investigator: J. W. Telford - Desert Research Institute, University of Nevada

Aircraft data for October 3, 9, and 11, 1972, have been analyzed, and 6-s averages are being recorded on magnetic tape.

64. *Mathematical Modeling of Eutrophication of Large Lakes*

Principal Investigator: R. V. Thomann - Manhattan College

No report.

65. Cladophora *Nutrient Bioassay*

Principal Investigator: G. F. Lee - University of Texas at Dallas

Inactive.

66. *Sediment Oxygen Demand*

Principal Investigator: N. A. Thomas - EPA

A draft report has been completed and is undergoing internal review. It should be available in October 1975.

67. *Main Lake Macrobenthos*

Principal Investigator: N. A. Thomas - EPA

The main lake benthos data are being analyzed to determine the factors that control the distribution of benthos in Lake Ontario.

68. *Exploration of Halogenated Hazardous Chemicals in Lake Ontario*

Principal Investigators: G. F. Lee - University of Texas at Dallas
C. L. Haile - University of Wisconsin

Task completed.

69. *Basin Precipitation - Land and Lake*

Principal Investigator: J. W. Wilson - CEM

Data Set No. 3, consisting of final daily precipitation totals for the lake and watershed, was completed and sent to IFYGL scientists having an interest in these data. Final daily precipitation totals for Lake Ontario basin were derived for a grid array of 79 x 64 points with a mesh length of 3.5 mi and were placed, together with monthly totals, on magnetic tape for Data Set No. 4. Work was begun on preparing, based on this data set, computer-drawn maps of precipitation over the basin for the year, by month, and for major storms. The maps will be used as input to the IFYGL atlas.

Considerable progress was made in evaluating the accuracy of the precipitation estimates by use of data from the Oswego Snow Network, the Rochester Mesonetwork, and the Bowmanville Network. It was found that better measurements are obtained by the combined radar-gage than by the gage-only technique. The improvement depends on the gage density and the distance from the radar. For example, over the Rochester Network, in an area of relatively dense gages and at a distant radar range, the combined radar-gage technique gave only slight improvement over the gage-only method. For the period of May to November, the latter yielded an underestimate of precipitation of 2.3 percent, compared with a 1.6 percent overestimate by the radar-gage technique. Over the Oswego Snow Network, however, in an area of relatively sparse gages and closer radar ranges, the gage-only method underestimated precipitation by 14.7 percent for the period November to March, compared with an underestimate of only 0.1 percent obtained by the combined method.

Work was begun on a report documenting the final precipitation estimates,

in which measurement accuracy will be specified and procedures used in obtaining the measurements will be described.

70. *Evaluation of ERTS Data for Certain Hydrological Uses*

Principal Investigators: D. R. Wiesnet and D. F. McGinnis - NESS/NOAA

Task completed.

71. *Distribution, Abundance, and Composition of Invertebrate Fish Forage Organisms in Lake Ontario*

Principal Investigator: R. F. Heberger, Jr. - Great Lakes Fisheries Laboratory

No report.

72. *Coastal Circulation in the Great Lakes*

Principal Investigator: G. T. Csanady - Woods Hole Oceanographic Institution

A status report on coastal boundary layer research, which was presented at the 18th Conference on Great Lakes Research in May, will appear in the first issue of Journal of Great Lakes Research under the title "Circulation, Diffusion and Frontal Dynamics in the Coastal Zone" (WHOI Contribution No. 3585). The point made in this paper is that onshore-offshore flow in the coastal zone is much less understood than longshore flow, the dynamics of which has become far clearer as a result of IFYGL work. Several inertial and frictional contributions to onshore-offshore flow are likely to be present all of them being contributions to the important coastal zone-midlake mass exchange processes.

In a paper on "Lateral Momentum Flux in Boundary Currents" (WHOI Contribution No. 3409), which will appear in the October 1975 issue of Journal of Physical Oceanography, some connections are established between coastal jets in the Great Lakes and larger-scale oceanic boundary currents.

Preliminary work has been done on the curious current-countercurrent structure of flow associated with the upwelled front near the northern shore of Lake Ontario. This structure may be attributable to strongly nonuniform momentum input in the vicinity of the front.

73. *Lake Water Characteristics*

Principal Investigator: A. P. Pinsak - GLERL/NOAA

Progress on this task is directly related to Task 7.

74. *Snow Observation Network*

Principal Investigator: Robert B. Sykes, Jr. - State University of New York at Oswego

Task completed.

75. *Lake Circulation Model*

Principal Investigator: J. R. Bennett - Massachusetts Institute of Technology

The model is now being reprogrammed so that resolution of the shore zones is increased by the use of a stretched grid. In the new version there are 10 levels in the vertical and approximately 800 horizontal points. The smallest grid intervals will be 5 m in the vertical and 1.5 km in the horizontal. This model will allow much better treatment of edgewave propagation and can be run with a much lower value of friction.

76. *Lake Ontario Invertebrate Fauna List*

Principal Investigator: A. Robertson - GLERL/NOAA

The zooplankton have been added to the list, which is almost complete. Distributional information is being added.

77. *Distribution and Variability of Physical Lake Properties*

Principal Investigator: R. Pickett - GLERL/NOAA

IFYGL buoy and tower data have often been given in terms of international station number, rather than position. As an aid in converting from one to the other, table 3 lists approximate positions of the stations.

Monthly wind histograms, based on wind data from all stations in the lake, have been prepared. The anemometers were located from 3 to 4 m above the lake surface. Table 4 shows the percentage of time the wind blew from each direction at various speeds. As seen in this table, wind speeds increased from May to a maximum in October. The prevailing wind direction was scattered in May, west to southwest in June, west in July, southwest from August to October, and east in November.

78. *Carbon Cycle Model*

Principal Investigators: A. Robertson and B. Eadie - GLERL/NOAA

The model has been developed and documentation has begun.

Table 3.--Approximate station locations

Station No.	Latitude (deg)	Latitude (min)	Longitude (deg)	Longitude (min)
1	43	26	79	31
2	43	31	79	19
3	43	24	79	17
4	43	18	79	8
5	43	26	78	44
6	43	44	78	49
7	43	39	78	29
8	43	52	78	1
9	43	51	77	42
10	43	39	77	42
11	43	47	76	51
12	43	35	78	47
13	43	26	78	44
14	43	36	78	1
15	43	25	77	56
16	43	28	77	44
17	43	36	77	24
18	43	26	76	57
19	43	42	76	45
20	43	33	76	38
21	43	42	76	26
22	43	16	79	0
23	43	21	78	43
24	43	21	78	43
25	43	22	78	29
26	43	22	77	45
27	43	21	77	45
28	43	20	77	46
29	43	26	76	34
30	43	53	76	27
31	43	50	76	18
32	43	51	78	51
33	43	26	78	0
34	43	50	78	51
36	43	49	78	50
37	43	32	76	38
38	43	49	78	50
40	43	48	78	50
41	43	49	78	50
55	43	55	77	41
59	43	53	77	41
69	43	51	78	44
71	43	21	79	36
72	43	21	77	15

Table 4.--Wind histograms in percent

Speed ($m\ s^{-1}$)	N	NE	E	SE	S	SW	W	NW	Total
				May					
0-4	7	10	11	9	9	9	12	7	74
4-8	2	4	5	1	2	3	4	3	24
>8	0	0	0	0	0	0	0	0	0
Total	9	14	16	10	11	12	16	10	98
				June					
0-4	5	8	10	7	8	10	10	6	64
4-8	4	3	4	1	3	6	6	4	31
>8	1	1	0	0	0	0	0	0	2
Total	10	12	14	8	11	16	16	10	97
				July					
0-4	5	4	4	7	11	13	15	9	68
4-8	1	1	1	1	2	8	11	5	30
>8	0	0	0	0	0	1	1	0	2
Total	6	5	5	8	13	22	27	14	100
				August					
0-4	5	6	7	9	11	12	8	5	63
4-8	2	3	3	3	3	7	8	3	32
>8	0	0	0	0	0	1	1	0	2
Total	7	9	10	12	14	20	17	8	97
				September					
0-4	4	4	5	7	9	8	5	4	46
4-8	9	4	4	3	5	10	6	5	46
>8	1	1	1	0	1	2	1	1	8
Total	14	9	10	10	15	20	12	10	100
				October					
0-4	4	3	5	7	8	5	2	3	37
4-8	6	3	4	5	7	8	5	7	45
>8	1	0	0	0	1	4	7	4	17
Total	11	6	9	12	16	17	14	14	99
				November					
0-4	3	5	12	12	7	3	3	3	48
4-8	9	3	6	3	3	5	4	5	38
>8	3	4	1	0	1	2	1	1	13
Total	15	12	19	15	11	10	8	9	99

DATA MANAGEMENT - IFYGL ARCHIVE

Data Management

Generation of the EBT ship station data, decibar averages of the subsurface data, 6-min average surface data, 6-min radiation data, and copies of the 1-s and 1/10-s subsurface data was completed by CEDDA in April. In May and June software was modified to permit recovery of several EBT's that could not be processed before. Approximately 10 percent of all archived EBT's were recovered by this procedure. The corresponding 6-min average tapes were updated at CEDDA and these augmented tapes sent to the IFYGL Archive as replacements. Microfilm listings of all 1-s data have also been generated and placed in the archive.

IFYGL Archive

A variety of highly detailed measurements were taken during IFYGL through the major U.S. data collection systems. Instruments and sensors were selected for quick response to rapidly changing parameters. The relatively dense network of shore stations, land and water towers, buoys and research vessels provided a means of studying the lake and atmosphere on a scale not available before.

The data have been placed on magnetic tapes, and these computations have been used to generate computer output microfilm to give the researcher an opportunity to scan portions of the data. The films, which are essentially digital printouts of the data on the magnetic tapes, are termed "microfilm listings"; those in which the data have been plotted as graphs are termed "microfilm graphics."

Examples of environmental features that can be studied by reviewing the microfilm are:

The response of temperature, dew point, pressure and wind to the passage of a thunderstorm.

The daily course of solar radiation and changes from sunny to cloudy days.

Variations of water current directions and speeds with depth, and with changes occurring at the surface.

Short- and long-period water temperature changes.

The structure of the atmosphere aloft to a finer space and time field than afforded by the conventional radiosonde network.

Physical Data Collection System (PDCS)

Locations of the buoys, towers, and land stations are shown in figure 5. The parameters measured varied somewhat with the installation, but, in general, consisted of the following:

Air pressure	Solar radiation, long and short wave
Air temperature	Water current speed and direction
Dew point	Water temperature
Evaporation	Wind speed and direction
Precipitation	

Sensors were mounted at several heights and depths where possible. Further information about the system, including a calendar of operational dates for each location, is given in IFYGL Bulletin No. 7 (pp. 69-72), No. 8 (pp. 70-76), No. 9 (pp. 78-79), No. 11 (pp. 70-75), and No. 14 (pp. 77-80).

PDCS data are available with two levels of editing. Provisional data were released after a relatively coarse check; they are of primary benefit when the user wants to see data that were eliminated in the later editing procedures. Final data have had many of the incorrect values deleted.

Figure 6 shows the format of the microfilm listings of the provisional data. The example shown is air temperature at 1.5 m above ground for 2 days in mid-May at Fort Niagara, N.Y. Values are given for each 6 min. Times are GMT. "99.99" indicates missing data. As can be expected with the provisional data, some obviously incorrect values stand out, e.g., the change of more than 6°C in 6 min. The lesser fluctuations on May 18 are real and some can be associated with the passage of clouds. There are thirty-two 16-mm reels in the set. The data are arranged chronologically by 8-day periods. The catalog description for requesting this film is: Microfilm of PDCS Provisional Data Listings, US Task 100, Line 3.

Figure 7, showing air temperature, dew point, and barometric pressure for the Oswego land station, is an example of the graphical form of the provisional data. The lines are composed of dots which are plots of the 6-min values. There are eleven 35-mm reels with the data arranged by 8-day periods. The catalog description: PDCS Provisional Microfilm Graphics, US Task 100, Line 4.

Figure 8, an example of the final listing, shows the unedited provisional data in the upper portion of the frame, and the final edited data below. Hourly averages follow each 8-day group of 6-min values. Figure 9 shows the arrangement. The standard deviations of the data used in deriving the hourly means are also listed. There are sixty-five 16-mm reels. The catalog description: PDCS Final 6-Minute Data and Hourly Average Listings, US Task 100, Line 6.

The final graphics, as shown in figure 10, are scaled differently from the provisional graphics; compare with figure 7. Again, each graph is for 8 days, and the 6-min values are plotted. There are eleven 35-mm reels in the set. The catalog description: PDCS Final Microfilm Graphics, US Task 100, Line 7.

The calibration data, station histories, and event logs have been placed on 13 reels of 16-mm microfilm for the use of persons needing background information.

U.S. IFYGL Ship System - Researcher and Advance II

On each ship a data acquisition system was used to record a number of parameters on magnetic tape. The cruises lasted about 1 week each, and covered areas of the lake selected for the purposes of the particular cruise. Figure 11 shows the computer output listing for a segment of a cruise by the Researcher. There is a microfilm reel for each corresponding magnetic tape, making a total of 587 reels. Most reels are less than one-half full, but are kept this way to facilitate matching the microfilm with the magnetic tapes. The catalog description: Ship System 1-Second Data Listings, US Tasks 101 (RESEARCHER) and 102 (ADVANCE II), Line 15.

Rawinsonde System

During four 8-day periods, there were eight rawinsonde releases per day at six stations bracketing the lake. These provide a means for finely detailed analyses of the atmospheric structure in space and time. The data can be scanned by viewing the computer graphics illustrated in figure 12. These plots are of the raw, unedited data. There are sixty-six 35-mm reels. The catalog description: Rawinsonde Time Series Plots, US Task 103, Line 4. Conventional adiabatic charts and data printouts are also available on 66 other reels identified as US Task 103, Line 8.

Data Availability

Tables 5 and 6 show the availability of IFYGL data, and carry the following information:

TASK NO. - The task numbers used for project identification.

INVESTIGATOR - Principal Investigator's name. The line numbers contained in the column identify groups of data. Line numbers not shown here relate to data collected but not placed in the final IFYGL Archive.

DESCRIPTION OF DATA - The underlined words are abbreviated task titles. The data or reports are described briefly.

MEDIA - These are not the media in which the data were received from the investigator, but are the media in which the data will be archived. In the United States final Archive, data will be preserved and distributed in the forms of magnetic tapes (digitized data), microfiche (reports), and microfilm (data that will not fit the other two media). Punched cards and papers will be converted to one of the preceding media for permanent retention, but will be retained for convenience until their usefulness has passed.

DATA AVAILABLE FROM INVESTIGATOR - Data on hand are identified ("At NCC") and estimated dates are given for the remaining data. "Now" means that the data are on hand at the Principal Investigator's location.

ARCHIVE - This tells the disposition of the data as follows:

Y - Yes - The data will be archived permanently.

YC - Yes - Copy to Canadian Data Bank. The data will be archived permanently and Canada has requested a copy for filing.

T - Temporary Archive. Data will be held until their usefulness is believed over.

PI - Principal Investigator. Data will be kept by the Principal Investigator, who should be contacted if the data are needed.

Requests for data should be directed to:

IFYGL Data Manager, Room 17
National Climatic Center, EDS, NOAA
Federal Building
Asheville, NC 28801

Telephone: 704 258-2850, ext. 754; FTS 704 254-0754

Upon request, tape documentation manuals can be sent that give full information about the contents of each group of tapes.

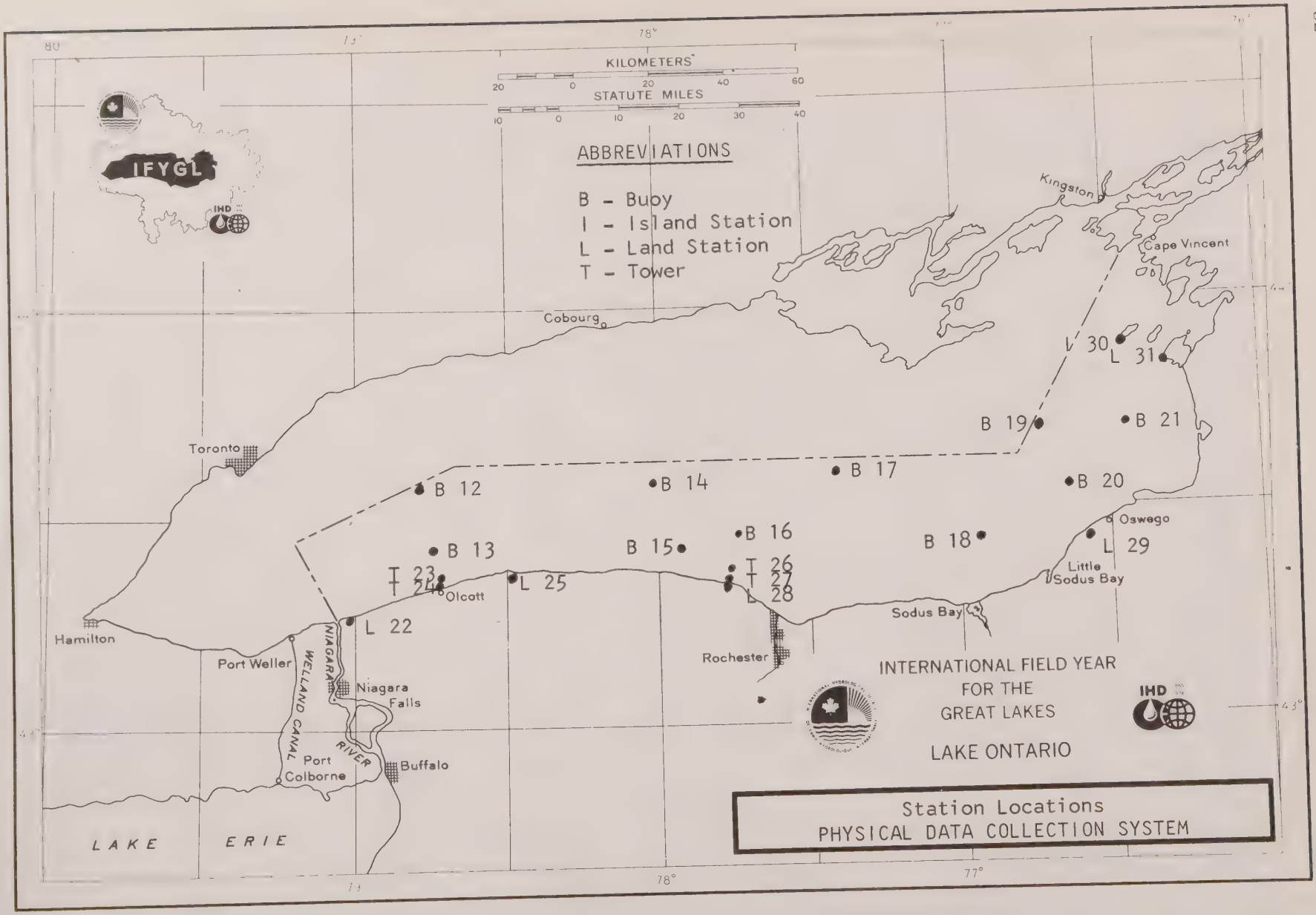


Figure 5.--Stations in the Physical Data Collection System.

INTERNATIONAL FIELD YEAR FOR THE GREAT LAKES - PHYSICAL DATA COLLECTION SYSTEM GENERATION DATE 03/21/74 08.55.37.
IFYGL STATION 22 PLATFORM LAND STATION (NIAGARA) PARAMETER AIR TEMPERATURE FRAME NO 1
LATITUDE 43 16 21 LONGITUDE 79 00 21 HEIGHT/DEPTH 1.5 M. UNITS DEG C

17 MAY 1972 138	MINUTE HOUR	00	06	12	18	24	30	36	42	48	54
	0	11.71	11.77	11.84	11.77	11.84	11.97	11.97	12.10	11.97	11.64
	1	11.31	11.04	10.78	10.64	10.58	10.78	10.51	10.31	10.72	10.98
	2	10.91	10.51	10.58	10.51	10.51	10.45	10.51	10.72	10.85	10.91
	3	10.91	11.04	11.11	11.31	11.31	11.31	11.31	11.24	-99.99	-99.99
	4	10.98	10.85	10.91	10.85	10.85	10.78	10.78	10.72	10.78	10.78
	5	10.72	10.78	10.72	10.78	10.78	10.78	10.85	10.91	10.98	10.91
	6	10.91	10.85	10.78	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99
	7	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99
	8	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99
	9	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99
	10	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99
	11	-99.99	-99.99	-99.99	4.19	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99
	12	11.71	-99.99	-99.99	8.45	-99.99	10.98	4.13	-99.99	10.64	7.85
	13	10.38	10.45	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99
	14	10.64	-99.99	-99.99	-99.99	-99.99	10.98	11.51	11.91	11.97	11.97
	15	10.98	10.85	10.38	10.85	11.84	11.64	10.72	10.45	10.31	10.78
	16	10.64	11.18	11.77	12.50	13.36	12.57	12.77	13.16	12.97	13.36
	17	13.23	12.30	13.29	12.04	11.97	12.30	12.77	13.23	12.90	12.50
	18	12.17	12.77	12.70	12.50	13.50	13.70	14.02	15.35	14.49	14.43
	19	15.87	14.43	15.61	15.02	15.28	15.28	14.89	14.69	15.02	-99.99
	20	-99.99	12.37	12.50	11.57	12.64	13.70	13.83	14.22	11.11	9.79
	21	9.71	10.58	11.37	9.65	9.05	8.99	9.18	9.45	9.79	10.91
	22	11.31	10.38	10.51	10.98	10.31	11.84	12.77	13.56	14.09	12.70
	23	12.57	11.18	10.64	9.38	8.65	6.91	6.99	6.65	6.91	7.19
18 MAY 1972 139	HOUR										
	0	7.45	7.52	7.71	7.58	7.32	7.32	7.52	7.65	7.71	7.85
	1	8.12	8.25	8.25	8.65	8.71	8.92	8.99	9.12	9.25	8.99
	2	8.85	9.25	9.38	9.38	9.52	9.52	9.32	9.52	9.71	9.45
	3	9.05	9.25	9.65	9.58	9.71	9.38	8.45	8.38	8.52	8.45
	4	7.78	7.32	7.19	7.78	8.05	8.45	8.45	8.58	8.65	8.71
	5	9.25	9.45	9.58	9.71	9.99	10.12	10.38	10.58	10.72	-99.99
	6	-99.99	10.78	10.78	10.98	10.98	11.04	11.04	11.18	11.37	11.44
	7	11.51	11.51	11.57	11.44	11.24	11.44	11.31	11.04	10.91	10.58
	8	10.91	10.85	10.64	10.64	10.58	10.85	10.85	10.78	10.38	10.58
	9	10.25	9.92	9.65	9.85	9.85	8.99	9.32	8.99	7.78	7.25
	10	7.19	6.99	6.91	6.91	7.05	7.25	7.45	7.85	7.99	8.45
	11	8.85	9.65	10.25	10.78	11.84	12.10	12.24	12.70	12.97	13.23
	12	13.43	13.56	13.83	14.36	14.62	14.62	14.82	15.08	15.28	16.07
	13	16.40	16.33	16.59	16.66	17.58	17.71	17.90	18.24	18.56	18.30
	14	19.22	19.54	19.22	20.13	19.88	20.07	20.39	20.78	20.13	20.20
	15	20.07	20.07	20.45	20.33	20.97	20.01	20.65	16.72	13.96	-99.99
	16	-99.99	11.04	11.04	11.91	13.50	12.57	12.30	11.64	11.11	11.04
	17	11.18	13.10	10.98	10.78	11.91	11.64	11.57	11.91	11.18	11.04
	18	11.84	10.25	10.64	11.37	10.64	11.24	9.79	9.32	9.18	9.58
	19	9.85	9.85	10.31	10.31	10.64	10.18	9.92	10.78	9.92	9.52
	20	9.85	9.71	9.52	9.92	9.05	10.12	10.25	10.05	10.45	11.37
	21	12.10	12.50	12.43	12.70	12.50	13.43	13.43	14.49	14.95	16.46
	22	18.56	19.22	19.74	20.26	20.45	20.26	18.89	16.98	16.72	14.56
	23	13.96	12.90	12.37	13.36	13.56	12.50	12.77	11.64	11.44	11.57

** NOTE ** PROVISIONAL, UNEDITED DATA, BEST ESTIMATE OF TRANSFER EQUATIONS AT TIME OF PROCESSING ** NOTE **

** NOTE ** -99.99 DENOTES MISSING DATA ** NOTE **

Figure 6.--Sample frame from microfilm of the PDCS Provisional Data Listings, U.S. Task 100, Line 3.

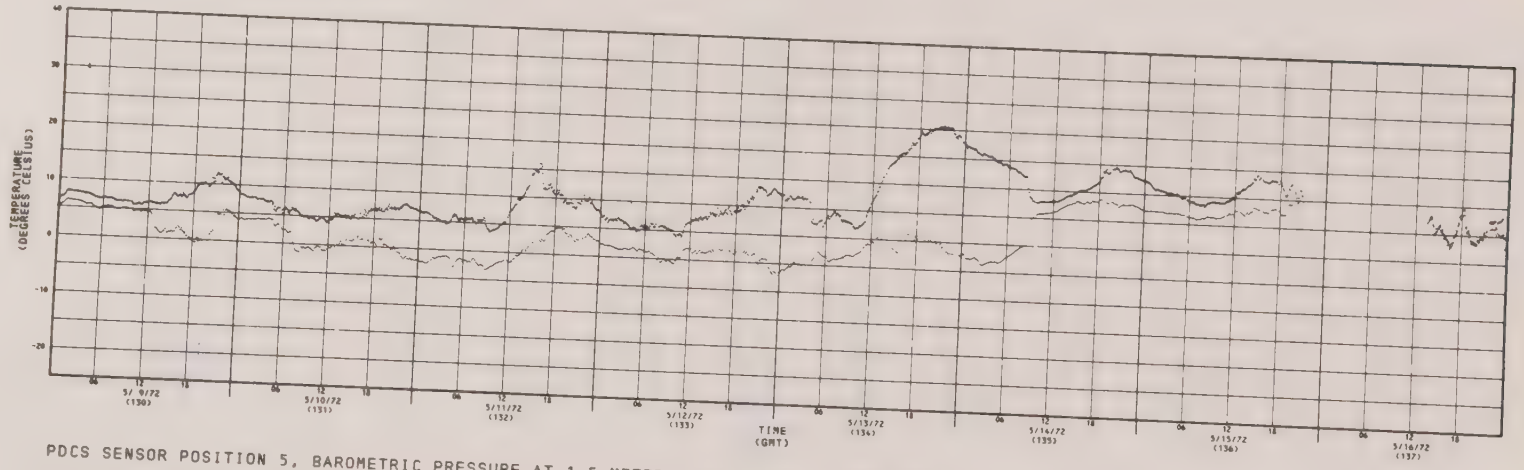
FRAME 10
PROVISIONAL DATA - DATA WILL BE TREATED FURTHER.

COMPUTER GENERATED ON MARCH 20, 1974

NOAA/IFYGL

EIGHT DAYS OF MEASUREMENTS OBTAINED AT 6 MINUTE INTERVALS - MAY 9, 1972 THRU MAY 16, 1972 - TIME GIVEN IN GMT.
PDCS STATION NUMBER 19 (INTERNATIONAL STATION LOCATION NUMBER 29, LATITUDE 43°26' 2" N, LONGITUDE 76°34' 2" W), LAND PLATFORM.

PDCS SENSOR POSITION 1, AIR TEMPERATURE AT 1.5 METERS ABOVE LAND. LINE INTENSITY ———
PDCS SENSOR POSITION 6, DEW POINT TEMPERATURE AT 1.5 METERS ABOVE LAND. LINE INTENSITY ———



PDCS SENSOR POSITION 5, BAROMETRIC PRESSURE AT 1.5 METERS ABOVE LAND. LINE INTENSITY ———

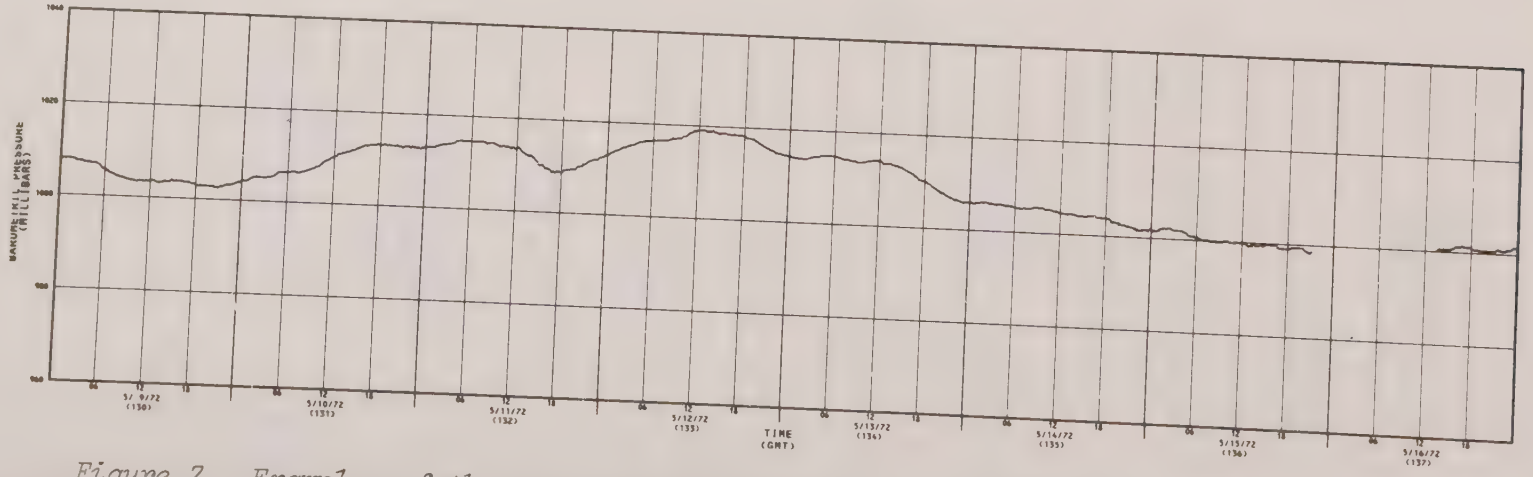


Figure 7.--Examples of the computer-generated graphs of the PDCS Provisional Data.

INTERNATIONAL FIELD YEAR FOR THE GREAT LAKES - PHYSICAL DATA COLLECTION SYSTEM GENERATION DATE 11/23/74 11.00.56.
IFYGL STATION 22 PLATFORM LAND STATION (NIAGARA) PARAMETER AIR TEMPERATURE FRAME NO 1
LATITUDE 43 16 21 LONGITUDE 79 00 21 HEIGHT/DEPTH 1.5 M. UNITS DEG C

PROVISIONAL, UNEDITED DATA

1 SEP 1972 245 MINUTE / HOUR	30	36	42	48	54	00	06	12	18	24
0	-999.00	-999.00	-999.00	-999.00	-999.00	21.81	21.42	21.23	21.36	21.36
1	20.97	20.71	20.52	20.26	20.45	20.26	20.39	20.39	20.33	19.61
2	19.48	18.76	18.82	17.90	17.77	18.63	19.02	19.09	19.28	19.09
3	18.89	18.56	17.97	18.37	18.04	17.84	17.38	16.85	17.12	17.12
4	17.19	16.98	16.92	16.72	16.66	16.66	16.66	16.72	17.12	17.38
5	17.25	17.64	17.84	18.24	18.30	18.04	18.30	18.56	18.56	18.76
6	18.96	19.35	18.96	18.89	18.89	18.89	18.76	18.69	18.89	18.82
7	18.89	18.76	18.63	18.96	19.15	19.02	19.02	18.89	19.02	18.96
8	19.02	18.82	18.89	18.82	18.96	18.96	18.82	18.96	19.09	-999.00
9	-999.00	18.89	18.96	18.82	18.82	18.96	19.02	18.89	18.63	18.76
10	18.89	18.82	18.69	18.76	18.63	18.69	18.69	18.63	18.43	18.63
11	18.56	18.43	18.56	18.50	18.43	18.63	18.69	18.82	18.96	19.02
12	19.09	19.22	19.22	19.41	19.48	19.94	20.13	20.26	20.33	20.71
13	20.91	21.04	21.16	21.48	21.75	21.94	22.07	22.51	22.65	22.84
14	22.91	23.10	23.35	23.55	23.29	23.62	23.68	24.13	24.00	24.00
15	24.25	24.25	24.58	24.71	25.16	25.35	25.03	25.16	25.29	25.74
16	25.67	26.19	25.87	26.13	26.64	26.38	26.38	26.70	27.67	27.03
17	27.22	27.09	27.35	27.03	27.60	27.79	27.93	27.41	27.41	27.79
18	28.12	27.73	27.86	27.86	28.18	27.93	28.31	28.63	28.06	-999.00
19	-999.00	28.63	28.96	28.76	28.12	28.37	28.50	28.25	28.57	28.44
20	28.25	28.31	28.76	28.25	28.63	28.37	28.63	28.57	28.18	28.12
21	28.18	28.25	28.31	28.12	28.12	27.86	27.86	27.79	27.99	27.67
22	27.67	27.60	27.67	27.54	27.35	27.35	27.16	27.03	27.03	26.70
23	26.57	26.70	26.25	25.80	25.67	25.42	25.09	24.77	24.06	24.13

-999.00 DENOTES MISSING DATA

FINAL EDITED DATA

MINUTE	30	36	42	48	54	00	06	12	18	24
0	-99.99	-99.99	-99.99	-99.99	-99.99	21.81	21.42	21.23	21.36	21.36
1	20.97	20.71	20.52	20.26	20.45	20.26	20.39	20.39	20.33	19.61
2	19.48	18.76	18.82	17.90	17.77	18.63	19.02	19.09	19.28	19.09
3	18.89	18.56	17.97	18.37	18.04	17.84	17.38	16.85	17.12	17.12
4	17.19	16.98	16.92	16.72	16.66	16.66	16.66	16.72	17.12	17.38
5	17.25	17.64	17.84	18.24	18.30	18.04	18.30	18.56	18.56	18.76
6	18.96	19.35	18.96	18.89	18.89	18.89	18.76	18.69	18.89	18.82
7	18.89	18.76	18.63	18.96	19.15	19.02	19.02	18.89	19.02	18.96
8	19.02	18.82	18.89	18.82	18.96	18.96	18.82	18.96	19.09	-99.99
9	-99.99	18.89	18.96	18.82	18.82	18.96	19.02	18.89	18.63	18.76
10	18.89	18.82	18.69	18.76	18.63	18.69	18.69	18.63	18.43	18.63
11	18.56	18.43	18.56	18.50	18.43	18.63	18.69	18.82	18.96	19.02
12	19.09	19.22	19.22	19.41	19.48	19.94	20.13	20.26	20.33	20.71
13	20.91	21.04	21.16	21.48	21.75	21.94	22.07	22.51	22.65	22.84
14	22.91	23.10	23.35	23.55	23.29	23.62	23.68	24.13	24.00	24.00
15	24.25	24.25	24.58	24.71	25.16	25.35	25.03	25.16	25.29	25.74
16	25.67	26.19	25.87	26.13	26.64	26.38	26.38	26.70	27.67	27.03
17	27.22	27.09	27.35	27.03	27.60	27.79	27.93	27.41	27.41	27.79
18	28.12	27.73	27.86	27.86	28.18	27.93	28.31	28.63	28.06	-99.99
19	-99.99	28.63	28.96	28.76	28.12	28.37	28.50	28.25	28.57	28.44
20	28.25	28.31	28.76	28.25	28.63	28.37	28.63	28.57	28.18	28.12
21	28.18	28.25	28.31	28.12	28.12	27.86	27.86	27.79	27.99	27.67
22	27.67	27.60	27.67	27.54	27.35	27.35	27.16	27.03	27.03	26.70
23	26.57	26.70	26.25	25.80	25.67	25.42	25.09	24.77	24.06	24.13

-99.99 DENOTES EDITED DATA

Figure 8.--Example of the final 6-min data listing.

INTERNATIONAL FIELD YEAR FOR THE GREAT LAKES - PHYSICAL DATA COLLECTION SYSTEM GENERATION DATE 11/23/74 11.00.56.
IFYGL STATION 19 PLATFORM BUOY (OSWEGO) PARAMETER WATER TEMPERATURE DATA ON FRAMES 2161-2164
LATITUDE 43 41 41 LONGITUDE 76 44 36 HEIGHT/DEPTH 100 M. UNITS DEG C

HOURLY STANDARD DEVIATIONS AND MEANS

HOUR	STDEV	MEAN	GOOD BEFORE	GOOD AFTER	HOUR	STDEV	MEAN	GOOD BEFORE	GOOD AFTER
	SEP	1, 1972				SEP	2, 1972		
1	0.00	4.05	0	5	1	.01	4.05	3	5
2	.01	4.01	5	5	2	.00	4.05	5	5
3	.00	4.01	5	5	3	.01	4.06	5	5
4	.02	4.02	5	5	4	.01	4.05	5	5
5	.00	4.01	3	5	5	.03	4.08	5	5
6	.00	4.01	5	5	6	.02	4.07	5	5
7	.01	4.01	5	5	7	.01	4.05	5	5
8	.02	4.03	5	5	8	0.00	4.08	5	5
9	.02	4.05	5	5	9	.01	4.07	5	5
10	.00	4.05	5	5	10	.00	4.05	5	5
11	.00	4.05	5	5	11	.00	4.05	3	5
12	.01	4.05	5	5	12	.01	4.06	5	5
13	.03	4.01	5	5	13	.01	4.08	5	5
14	.02	4.01	5	5	14	0.00	4.08	5	5
15	.00	4.05	3	5	15	0.00	4.08	5	5
16	.02	4.03	5	5	16	0.00	4.08	5	5
17	.02	4.03	5	5	17	.02	4.07	5	5
18	.03	4.02	5	5	18	.01	4.07	5	5
19	.02	4.00	5	5	19	.01	4.08	5	5
20	.03	4.02	5	5	20	.00	4.11	5	5
21	.01	4.05	4	5	21	.02	4.09	3	5
22	.01	4.06	5	5	22	0.00	4.08	5	5
23	.00	4.05	5	5	23	.01	4.08	5	5
24	.00	4.05	5	5	24	.01	4.07	5	5
	SEP	3, 1972				SEP	4, 1972		
1	.00	4.05	5	5	1	.00	4.01	5	5
2	.00	4.05	5	5	2	.01	3.99	5	5
3	.00	4.05	5	5	3	.01	4.01	3	5
4	.02	4.07	5	5	4	.03	4.03	5	5
5	.01	4.09	5	5	5	.03	4.05	5	5
6	.03	4.07	5	5	6	.00	4.01	5	5
7	.01	4.06	3	5	7	.02	4.02	5	5
8	.01	4.08	5	5	8	.00	4.01	5	5
9	.02	4.05	5	5	9	.01	4.05	5	5
10	.01	4.01	5	5	10	.01	4.06	5	5
11	.02	4.02	5	5	11	.00	4.05	5	5
12	.00	4.05	5	5	12	.00	4.05	5	5
13	.02	4.07	5	5	13	.00	4.05	3	5
14	.01	4.06	5	5	14	.00	4.05	5	5
15	.02	4.06	5	5	15	.00	4.05	5	5
16	.01	4.06	5	5	16	.02	4.07	5	5
17	.02	4.06	3	5	17	.00	4.05	5	5
18	.02	4.07	5	5	18	.00	4.05	5	5
19	.02	4.06	5	5	19	.00	4.05	5	5
20	.02	4.07	5	5	20	.00	4.05	5	5
21	.01	4.05	5	5	21	.01	4.06	5	5
22	.01	4.05	5	5	22	.00	4.05	5	5
23	.01	4.05	5	5	23	.01	4.05	3	5
24	.02	4.03	5	5	24	.02	4.07	5	5

Figure 9.--Example of the final PDCS hourly average listing.

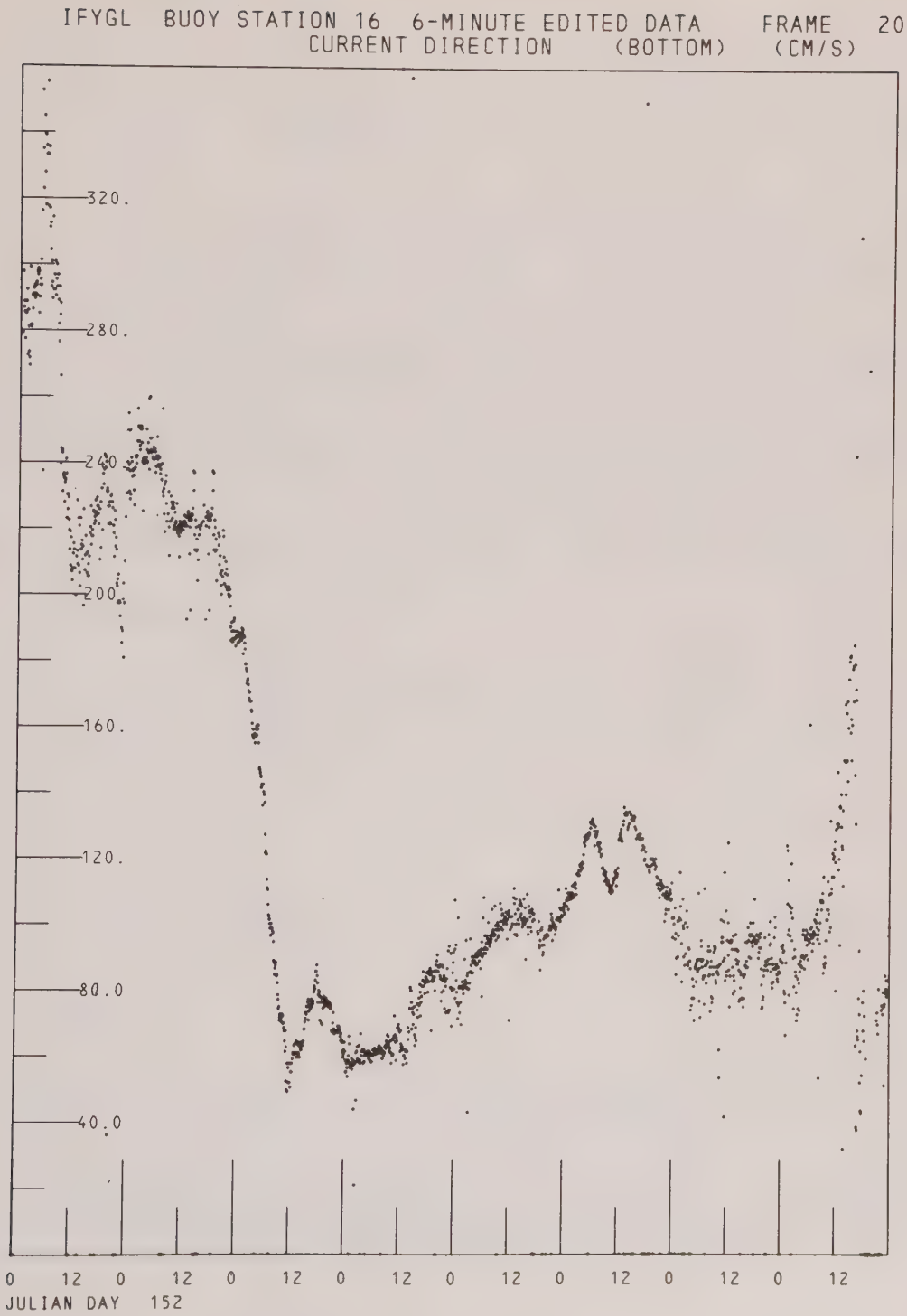


Figure 10.--Example of the final PDCS microfilm graphics.

1	2	3		4		5			6	7		8		
21 582 1391741 2 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	73.17	30.49	4.05	.36
26 582 1391741 3 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	73.25	30.43	4.07	.35
31 582 1391741 4 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	73.37	30.19	4.10	.35
36 582 1391741 5 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	73.37	30.14	4.11	.36
41 582 1391741 6 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	73.63	29.98	4.10	.36
46 582 1391741 7 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	73.66	31.03	4.01	.35
1 583 1391741 8 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	73.75	30.50	4.20	.35
6 583 1391741 9 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	73.65	31.08	4.08	.35
11 583 1391741 10 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	73.79	31.13	4.02	.35
16 583 1391741 11 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	74.22	31.19	4.02	.35
21 583 1391741 12 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	74 38	31.22	4.02	.35
26 583 1391741 13 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	74 73	31.11	4.03	.35
31 583 1391741 14 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.01	31.04	4.05	.35
36 583 1391741 15 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	257.	75.17	30.95	4.07	.35
41 583 1391741 16 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.20	30.94	4.10	.04
46 583 1391741 17 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.31	30.93	4.08	.35
1 584 1391741 18 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.61	30.84	4.13	.35
6 584 1391741 19 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.46	30.70	4.18	.35
11 584 1391741 20 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.57	30.43	4.19	.35
16 584 1391741 21 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.62	30.24	4.25	.35
21 584 1391741 22 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	75.99	30.03	4.25	.35
26 584 1391741 23 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	76.16	30.03	4.28	.35
31 584 1391741 24 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	76.33	29.92	4.29	.35
36 584 1391741 25 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	76.41	29.75	4.30	.35
41 584 1391741 26 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	76.75	29.44	4.33	.35
46 584 1391741 27 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	76.89	29.08	4.38	.35
1 585 1391741 28 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.4	259.	77.08	28.74	4.39	.35
6 585 1391741 29 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	77.26	28.75	4.41	.35
11 585 1391741 30 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	77.26	28.48	4.45	.35
16 585 1391741 31 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	77.44	28.56	4.47	.35
21 585 1391741 32 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	77.60	27.96	4.50	.35
26 585 1391741 33 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	77.78	27.58	4.51	.35
31 585 1391741 34 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	77.86	27.59	4.53	.35
36 585 1391741 35 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	77.81	27.44	4.53	.35
41 585 1391741 36 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	77.73	26.98	4.54	.35
46 585 1391741 37 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	77.92	26.62	4.56	.35
1 586 1391741 38 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	78.11	26.47	4.56	.35
6 586 1391741 39 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	78.19	26.51	4.59	.36
11 586 1391741 40 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.4	258.	78.49	26.63	4.57	.35
16 586 1391741 41 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	78.71	26.75	4.54	.36
21 586 1391741 42 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	78.82	26.46	4.54	.36
26 586 1391741 43 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	78.98	27.08	4.50	.36
31 586 1391741 44 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	79.24	27.22	4.48	.36
36 586 1391741 45 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	79.72	27.49	4.47	.36
41 586 1391741 46 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.2	259.	79.94	27.77	4.44	.36
46 586 1391741 47 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	80.40	28.06	4.40	.36
1 587 1391741 48 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	80.49	28.29	4.38	.36
6 587 1391741 49 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	80.72	28.62	4.35	.36
11 587 1391741 50 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.2	259.	80.91	29.03	4.29	.36
16 587 1391741 51 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	81.08	29.40	4.20	.36
21 587 1391741 52 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	261.	81.14	29.94	4.15	.36
26 587 1391741 53 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	81.23	29.90	4.22	.36
31 587 1391741 54 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	81.39	29.12	4.25	.36
36 587 1391741 55 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	81.60	29.00	4.27	.36
41 587 1391741 56 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	81.67	28.75	4.31	.36
46 587 1391741 57 20010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	81.70	28.64	4.33	.36
50 587 1391741 59 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	82.35	28.61	4.37	.36
5 588 1391742 0 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	82.71	28.66	4.34	.36
10 588 1391742 1 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	83.05	28.63	4.34	.36
15 588 1391742 2 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	83.07	28.63	4.31	.36
20 588 1391742 3 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	83.45	29.07	4.33	.36
25 588 1391742 4 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	83.44	29.52	4.25	.36
30 588 1391742 5 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	83.62	29.39	4.24	.36
35 588 1391742 6 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	83.89	29.48	4.21	.36
40 588 1391742 7 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	84.37	29.58	4.22	.36
45 588 1391742 8 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	84.39	29.45	4.22	.36
50 588 1391742 9 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	84 51	29.53	4.22	.36
5 589 1391742 10 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	84.53	29.38	4.22	.36
10 589 1391742 11 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	258.	84.67	29.17	4.24	.36
15 589 1391742 12 50010	1.4145	1.90	-9.00	-.2	2.77	1.30	.4622	.3270	.4609	.0339	1007.3	259.	84.68	29.24	4.25	.36

Figure 11.--Sample frame of the 1-s computer output listing from the U.S. ship system. The numbered columns are: 1 = Julian day and hour, 2 = wind speed and direction, 3 = air temperature, 4 = radiation, 5 = ship's position (Decca), 6 = air pressure, 7 = ship's heading, and 8 = TBT data.

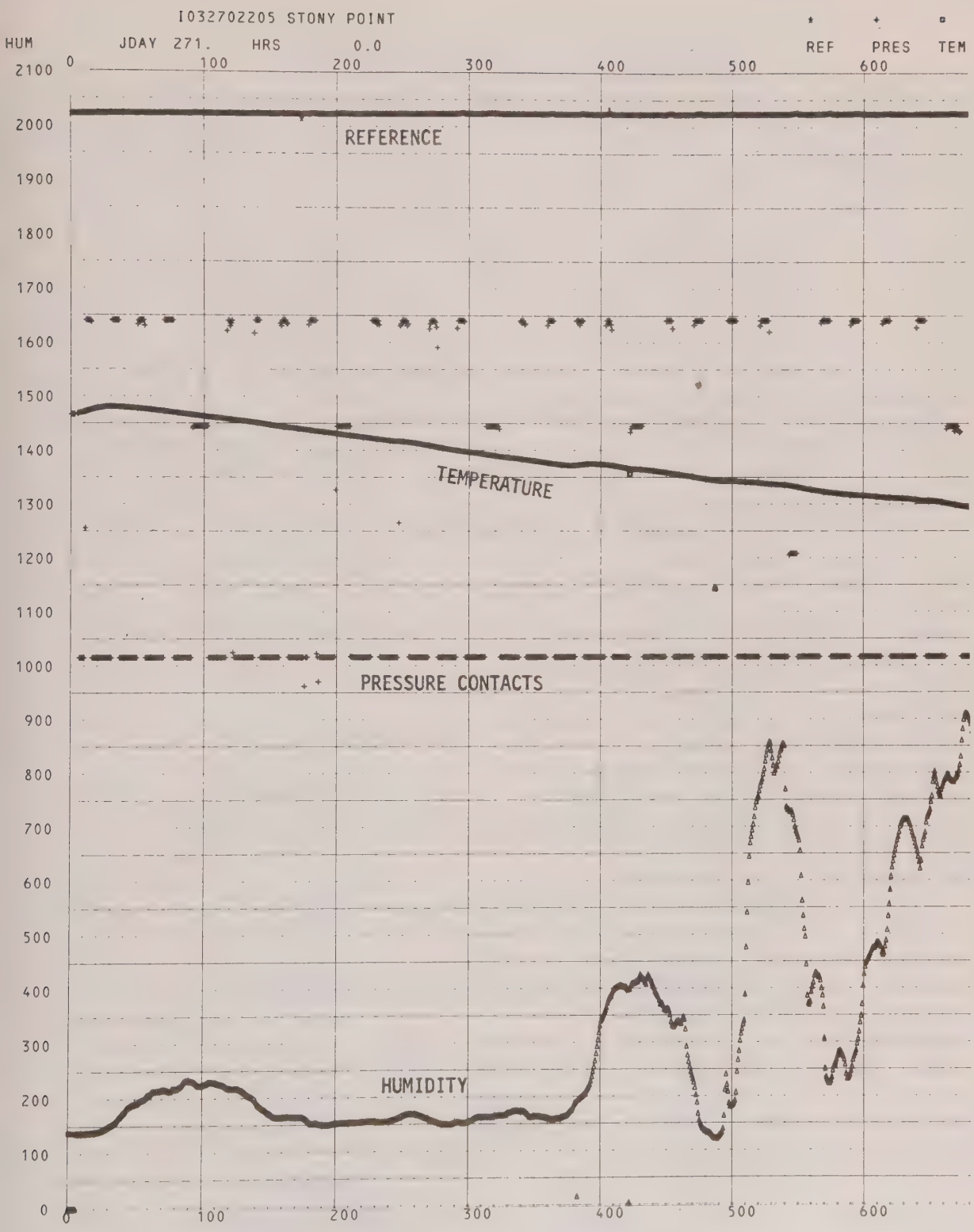


Figure 12.--Portion of a time-series graph of the rawinsonde data.

Table 5.--Summary of data available from final IFYGL Archive: United States

TASK NO	INVESTIGATOR		DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL		ATMOSPHERIC BOUNDARY LAYER			
3	Bean		RFF/DC-6 (Gust Probe)			
		3.	Reduced turbulence data - Binary	Mag Tape	At NCC	Y
		4.	Computed flux, Time series spectra	Microfilm	At NCC	YC
		5.	Time series graphics(U,V,W,T,PV)	Microfilm	At NCC	YC
		6.	Means, Variances and Fluxes	Microfilm	At NCC	YC
		7.	Plots of Flight Paths	Microfiche	At NCC	YC
		8.	Spatial-Temporal Variations in Turbulence Fluxes	Microfiche	At NCC	YC
5	Businger		Profile Mast and Tower			
		5.	Computed profile & Flux data, 15 minute and hourly averages	Mag Tape	At NCC	YC
		6.	Final Report	Microfiche	Sept 1975	YC
		7.	Edited Met. Data - Selected profiles	Mag Tape	June 1976	Y
14	Estoque		Boundary Layer Structure			
		1.	Land Met. Stations - Surface Met. Data	Strip Chart	Now	PI
		3.	Tethered balloon (BLIP)	Microfilm	At NCC	YC
		6.	NCAR Queen Air ACFT - Processed data listing - 1 sec. sample rate	Microfilm	Now	PI
		7.	PIBAL observations-wind components	Microfilm	At NCC	YC
		8.	Cloud Cover Photography - Time lapse	16MM Film	Now	PI
		9.	Cloud Cover Photography - Still	Negatives	Now	PI
15	Estoque		Mesoscale Simulation Studies			
		1.	Final Report	Microfiche	June 1976	Y
20	Almazan		Boundary Layer Flux Synthesis			
		1.	Final Report	Microfiche	June 1976	Y
38	Panofsky		Turbulence-Niagara Bar Tower			
		2.	Raw Wind Speed Fluctuations	Anlg Mtape	Now	PI
		3.	Reduced wind speed fluctuations	Mag Tape	August 1975	YC
		4.	System description report	Microfiche	August 1975	YC
		5.	Two-Point Statistics over Lake Ontario	Microfiche	At NCC	YC
63	Telford		NCAR/DRI Aircraft			
		2.	Reduced data - Gust probe, met sensors	Mag Tape	Now	PI
		3.	Reduced data - (Time, location, U, V, W, temperature, dew point, pressure)	Mag Tape	Now	PI
		4.	Reduced data, Calcomp Plot - Aircraft Track 6-sec. wind vectors	Sheets	Now	PI
		5.	Final data report-Computed fluxes of momentum, heat, vapor (1/minute)	Microfiche	Oct 1975	YC
		6.	Final Report	Microfiche	June 1976	Y
	PANEL		BIOLOGY - CHEMISTRY			
1	Armstrong		Sediment Analysis			
		2.	Phosphorus Uptake-Release by Sediments	Microfiche	At NCC	YC
4	Burris		Water Sample - Analysis			
		2.	Final Report	Microfiche	.	YC
6	Kutkuhn		Status of Fish Population			
		1.	Fish samples-Size,Numbers,Scale collections (From punched cards)	Mag Tape	At NCC	YC
		2.	Fish samples-Size,Numbers,Scale collections (From punched cards)	Listing	At NCC	T
		3.	Water temperature (BT) (From punched cards)	Mag Tape	At NCC	YC
		4.	Digitized BT, 5 Fathoms	Listing	At NCC	T

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	BIOLOGY - CHEMISTRY (Cont'd)			
	5.	RESEARCHER Fathometer (Echo Sounding)	Rolls	Now	PI
	6.	Final Report	Microfiche	Dec 1975	YC
7	Casey	Material Balance			
	1.	Material balance data in STORET	STORET	At NCC	Y
	3.	Final Report - Streams	Microfiche	Sept 1975	YC
	4.	Final Report - Main Lake	Microfiche	Dec 1975	Y
12	Thomas	Rochester Embayment Study			
	2.	Chemical Data	Mag Tape	Now	PI
	4.	Current speed and direction, water temperature, wind	Mag Tape	At NCC	YC
	10.	Gravity Magnetic Survey	Mag Tape	At CEDDA	PI
	11.	Researcher Fathometer Soundings	Strip Ch.	Now	PI
	12.	Final Report	Microfiche	At NCC	Y
19	Hetling	Transport of Nutrients			
	1.	Nutrient transport data in STORET	STORET	At NCC	Y
	3.	Final Report	Microfiche	Sept 1975	YC
21	Davies	Hazardous Material Flow			
	1.	Hazardous material data in STORET	STORET	At NCC	Y
	3.	Final Report	Microfiche	Dec 1975	YC
22	Kim	Remote Measurement of Chlorophyll			
	4.	New Algae Mapping Technique	Microfiche	At NCC	YC
26	Lee	Algal Nutrient Availability			
	3.	Final Report	Microfiche	Sept 1975	YC
29	McNaught	Zooplankton Production			
	1.	Zooplankton data in STORET	STORET	At NCC	Y
	4.	Acoustical Profiles	Sheets	Now	PI
	5.	Zooplankton Concentration Samples	Samples	Now	PI
	6.	Final Report	Microfiche	Oct 1975	YC
33	Moore	Nearshore Study			
	1.	Nearshore data in STORET	STORET	At NCC	Y
	5.	Final Report	Microfiche	Oct 1975	Y
35	Mozley	Benthos Study			
	1.	Benthos study data in STORET	STORET	At NCC	Y
	3.	EBT's-ADVANCE II, Cruise 26	Microfiche	At NCC	YC
	4.	Final Report	Microfiche	Oct 1975	YC
44	Bell	SHENEHON (Ship) Data			
	2.	Final Meteorological 6-minute, Hourly and Daily data	Mag Tape	Dec 1975	YC
	3.	Solar Radiation Incident & Reflected and Daily data	Charts	Now	PI
	5.	Chemical/digitized BT (1 meter)	Mag Tape	Sept 1975	YC
	6.	Final Report (Oswego Harbor)	Microfiche	Sept 1975	YC
46	Polcyn	Cladophora Sensing			
	1.	Cladophora Distribution	Microfiche	At NCC	Y
47	Polcyn	Suspended Sediments Sensing			
		No special report for this task. See Final Report for Task 45, Remote Sensing - Terrain -			

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	BIOLOGY - CHEMISTRY (Cont'd)			
60	Stoermer	Phytoplankton			
	1.	Phytoplankton data	STORET	At NCC	Y
	3.	Data count Pre-report	Microfiche	At NCC	YC
	4.	Data Analysis-Lakewide Changes	Microfiche	At NCC	YC
	5.	Phytoplankton Composition & Abundance	Microfiche	At NCC	YC
62	Sweeney	River Discharge Impacts			
	1.	Nearshore Bio-Chem STORET data	STORET	At NCC	Y
	6.	Final Report	Microfiche	Oct 1975	YC
64	Thomann	Eutrophication Model			
	1.	Final Report	Microfiche	June 1976	Y
66	Thomas	Sediment Oxygen Demand			
	1.	Sediment oxygen data in STORET	STORET	At NCC	Y
	4.	Final Report	Microfiche	Oct 1975	YC
67	Thomas	Lake Macrobenthos			
	1.	Distribution of Benthic Organisms	Microfiche	Oct 1975	YC
	2.	Sediment Particle Size,Composition	Microfiche	Oct 1975	YC
	3.	Final Report	Microfiche	Oct 1975	YC
68	Lee	Hazardous Chemicals			
	1.	Hazardous chemical STORET data	STORET	At NCC	Y
	5.	Final Report	Microfiche	Oct 1975	YC
71	Heberger	Fish Forage Organisms			
	1.	Fish Food Habits Data	Pun'd Cards	At NCC	YC
	2.	Final Report	Microfiche	Nov 1975	YC
73	Pinsak	Lake Water Characteristics			
	1.	Edited Depth, Temperature, Chemical composition data	Mag Tape	At NCC	YC
76	Robertson	Fauna List			
	1.	Final Report	Microfiche	June 1976	Y
78	Robertson	Carbon Cycle Model			
	1.	Final Report	Microfiche	June 1976	Y
	PANEL	ENERGY BALANCE			
2	Atwater	Net Radiation			
	1.	Interim Reports	Microfiche	At NCC	Y
	2.	Net radiation data for grid	Mag Tape	At NCC	Y
	3.	Final Report	Microfiche	At NCC	Y
17	Dilley	Nearshore Ice Formation			
	2.	Meteorological data-Van (Temperature, Wind, Radiation,Pressure)	Mag Tape	At NCC	YC
	3.	Time lapse photography (Ice Formation)	Film	Now	PI
	4.	Analysis of Lake Shore Ice Formation, Growth, and Decay-IFYGL Phase 2	Microfiche	At NCC	YC
	5.	Data Report	Microfiche	At NCC	YC
18	Grumblatt	Advection Term-Energy Balance			
	2.	Water temperature,5-minute intervals	Mag Tape	At NCC	YC
	3.	Final Report	Microfiche	Jan 1976	YC
28	Lyons	Cloud Climatology			
	1.	Solar Radiation-Incident	Strip Ch.	Now	PI

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR		DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL		ENERGY BALANCE (Cont'd)			
		2.	1 Hour averages (Planimetered)	Microfiche	Oct 1975	YC
		3.	Cloud photography-Color Panorama	35 MM Film	Now	PI
		4.	Cloud photography-Color All Sky	16 MM Film	Now	PI
		5.	Cloud photography-Other	35 MM Film	Now	PI
		7.	Final Report	Microfiche	Oct 1975	YC
36	Hoffeditz		Evaporation Pan Network (US & CDN)			
		1.	Radiation, Incident LW & SW hourly totals	Pun'd Cards	Oct 1975	YC
		2.	Evaporation Pan data (US & CDN)	Pun'd Cards	Oct 1975	YC
		4.	4 Reports & Final Report	Microfiche	Oct 1975	YC
40	Piech		Lake Optical Properties			
		3.	Turbidity Measurements-Irradiance Meter/Transmissometer-graphs	Sheets	Now	PI
		4.	Turbidity Measurements - Irradiance meter/transmissometer - graphs	Microfiche	Oct 1975	YC
		5.	Documentation-Location of measurements Final Report	Microfiche	Oct 1975	YC
41	Pinsak		Lake Heat Storage			
		1.	Weekly mean water temperatures for lake cells	Microfiche	June 1976	Y
		2.	Final Report	Microfiche	June 1976	Y
42	Pinsak		Sensible & Latent Heat Flux			
		1.	Final Report	Microfiche	June 1976	Y
43	Pinsak		Lake Thermal Advection			
		1.	Final Report	Microfiche	June 1976	Y
54	Quinn		Lake Ontario Ice Studies			
		1.	Ice Thickness - Manual Measurement A. 5 sites, weekly B. Ice patterns-graphic display C. Surface meteorological data D. Albedo measurement	Microfiche	At NCC	YC
61	Strong		Satellite			
		1.	NOAA 2 VHRR Digital Tapes	Mag Tape	Sept 1975	Y
		2.	NOAA 2 VHRR Images	Film	Now	PI
		3.	Final Report	Microfiche	Sept 1975	YC
	PANEL		TERRESTRIAL WATER BALANCE			
8	Schutze		Runoff			
		1.	Weekly streamflow data	Microfiche	June 1976	Y
		2.	Summary Report	Microfiche	June 1976	Y
9	Schutze		Evaporation (Lake-Land)			
		1.	Weekly evaporation estimates	Microfiche	June 1976	Y
		2.	Final Report	Microfiche	June 1976	Y
10	DeCooke		Simulation Studies			
		1.	Final Report	Microfiche	June 1976	Y
11	Schutze		Lake Precipitation			
		1.	Monthly precip estimates-US Basin	Microfiche	June 1976	Y
		2.	Final Report	Microfiche	June 1976	Y
13	Embree		Soil Moisture and Snow Hydrology			
		2.	Soil moisture tabulated data (1/Month)	Microfiche	Sept 1975	YC

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR		DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL		TERRESTRIAL WATER BALANCE (Cont'd)			
		3.	Snow Depth-Water equivalent (1/Month)	Microfiche	Sept 1975	YC
		4.	Stream flow - discharge	Microfiche	Sept 1975	YC
		5.	Final Report	Microfiche	Sept 1975	YC
16	Stoughton		Lake Level Transfer			
		1.	Final Report	Microfiche	Dec 1975	Y
23	Cox		Outflow Term TWB			
		1.	Discharge St. Lawrence River	Mag Tape	At NCC	YC
		2.	Final Report	Microfiche	At NCC	YC
24	Cox		Flow Model			
		1.	Final Report	Microfiche	Dec 1976	Y
30	Wilshaw		Lake Storage Term (Water Levels)			
		2.	5-minute water levels	Mag Tape	At NCC	YC
		3.	Raw hourly water levels	Mag Tape	Nov 1975	T
		4.	Edited (Converted to common datum)hourly water levels	Mag Tape	At NCC	YC
		5.	Final Report	Microfiche	Nov 1975	YC
31	Schutze		Soil Moisture			
		1.	Weekly soil moisture data	Microfiche	June 1976	Y
		2.	Final Report	Microfiche	June 1976	Y
39	Peck		Airborne Snow Reconnaissance			
		2.	Ground Truth Data	Microfiche	At NCC	YC
		3.	Airborne Survey Water Equivalent	Microfiche	At NCC	YC
		4.	Soil moisture measurements	Microfiche	At NCC	YC
		5.	Snow cover water equivalents	Microfiche	At NCC	YC
		6.	Water equivalent - air survey	Microfiche	At NCC	YC
		7.	Final Report (Task Summary)	Microfiche	Dec 1975	YC
45	Polcyn		Remote Sensing - Terrain			
		2.	Aerial photography-Color	70 MM Film	Now	PI
		3.	Aerial photography-Black-White Prints	Film	Now	PI
		4.	Aerial photography-White Negatives	Film	Now	PI
		6.	Final Report	Microfiche	At NCC	YC
		7.	Aircraft flight data record	Microfiche	At NCC	Y
48	Quinn		Island - Land Precipitation			
		2.	Hourly precipitation amounts	Mag Tape	At NCC	YC
		3.	Precipitation - 80 NWS stations	Mag Tape	At NCC	YC
		4.	Daily Lake Ontario Basin precipitation	Microfiche	At NCC	YC
		5.	Over Lake Precipitation Report	Microfiche	June 1976	YC
		6.	Over Land Precipitation Report	Microfiche	At NCC	YC
51	Quinn		Evaporation Synthesis			
		1.	Final Report	Microfiche	June 1977	Y
52	Rhodehamel		Groundwater Wells			
		2.	Water levels analog-continuous	Strip Ch.	Now	PI
		3.	Summary (chronological list)	Microfiche	Oct 1975	YC
		4.	Final Report	Microfiche	June 1976	YC
58	Schultz		Runoff			
		1.	Tributary stage levels - strip charts (4 USGS gages)	Microfilm	At NCC	YC
		2.	Tributary stage levels observations 15 minute-digital USGS gages	Mag Tape	Oct 1975	YC
		3.	Tributary stage levels - daily data	Mag Tape	Now	PI
		4.	Tributary stage levels	Pun'd Cards	At NCC	YC

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	TERRESTRIAL WATER BALANCE (Cont'd)			
	5.	Mean weekly flow	Microfiche	At NCC	YC
	6.	Tributary stage & discharge, 35 miscellaneous sites-intermittent	Microfiche	At NCC	YC
	7.	N.Y. State Barge Canal data	Microfiche	At NCC	YC
	8.	Final Report	Microfiche	Sept 1975	YC
69	Wilson	Radar and Precipitation Gage Network			
	1.	Raw radar data-returned echo intensity-compacted	Mag Tape	Now	PI
	3.	Photographs of radar scope	Microfilm	At NCC	Y
	4.	Daily total precipitation amounts including precipitation gage data	Mag Tape	At NCC	YC
	5.	Radar Documentation	150 Pages	At NCC	T
	6.	Oswego Radar Event Logs	300 Pages	At NCC	T
	7.	Raw precipitation data-Rochester precipitation network	Paper Tape	At NCC	T
	8.	Documentation-Rochester Precip. network observers logs	600 Pages	At NCC	T
	10.	Precipitation data - Rochester Network	Mag Tape	At NCC	YC
	11.	Precipitation data - Oswego Snow Network	Microfiche	At NCC	YC
	12.	Radar data hourly precipitation amounts (by storm)	Mag Tape	May 1976	YC
	13.	Avg. daily precip.,eastern Lake Ontario	Microfiche	At NCC	Y
	14.	Collection and Analyses of Digitized Radar Data - Report	Microfiche	At NCC	Y
	15.	Final Report	Microfiche	May 1976	Y
70	Wiesnet	Aerial Hydrological Survey			
	7.	Final Report	Microfiche	At NCC	YC
74	Sykes	Snow Observation Network			
	1.	Documentation	Microfiche	Oct 1975	Y
	2.	Rain Gage Charts - 13 locations	Microfilm	At NCC	Y
	3.	Student observation forms	5000 Pages	Now	PI
	4.	Replications of Ice Crystals	Slides	Now	PI
	5.	Photo of flakes, crystal types	Film	Now	PI
	6.	Final Report I. Oswego Weather Radar Project 1972/1973	Microfiche	At NCC	Y
	7.	Final Report II. Precipitation Gages plus Snowfall	Microfiche	At NCC	Y
	8.	Final Report III.Supp. Study 1973/1974	Microfiche	At NCC	Y
	PANEL	WATER MOVEMENT			
27	Liu	Waverider Buoy			
	3.	Digitized wave data(3 samples/second)	Mag Tape	Part at NCC	Y
	5.	Hourly summary and plot of digitized wave data	Microfilm	At NCC	YC
	6.	Final Report	Microfiche	Oct 1975	YC
34	Mortimer	Internal Waves - Temperature Transect			
	5.	Temperature Transects	Microfilm	Oct 1975	YC
	6.	Final Report	Microfiche	Oct 1975	YC
37	Pandolfo	Simulation Studies			
	1.	Volume I - Final Report	Microfiche	At NCC	Y
	2.	Volume II - FORTRAN Program	Microfiche	At NCC	Y
	3.	Volume III - One-Dimensional Model	Microfiche	At NCC	Y
	4.	Volume IV - 3-Dimensional Model	Microfiche	At NCC	Y
49	Rao	Lake Circulation			
	1.	Final Report	Microfiche	June 1976	Y

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	WATER MOVEMENT (Cont'd)			
55	Saylor	Lagrangian Current Observations			
	1.	Current drogue - Daily plot	Microfilm	Oct 1975	YC
	2.	Water temperature - Daily chart	Microfiche	Oct 1975	YC
	5.	Final Report	Microfiche	Oct 1975	YC
56	Saylor	Circulation - Currents			
	2.	Current/Wind daily charts	Microfilm	Oct 1975	YC
	3.	Final Report	Microfiche	Oct 1975	YC
59	Scott	Coastal Chain			
	1.	Current Meter Data, Water Temperature	Mag Tape	At NCC	YC
	2.	Final and Basic Data Report	Microfiche	At NCC	YC
77	Pickett	Physical Lake Properties			
	1.	Current, temperature analysis	Microfiche	Dec 1976	Y
	2.	Final Report	Microfiche	Dec 1976	Y
	PANEL	MAJOR SYSTEMS			
50	Rasmusson	Atmospheric Water Balance			
	1.	Heat and Water Budget Computations	Microfiche	June 1976	Y
	2.	Final Report	Microfiche	June 1976	Y
100	CEDDA	Physical Data Collection System			
	1.	Basic data-engineering counts	Mag Tape	At NCC	YC
	2.	Provisional Meteorological and Limnological data (6 Minute)	Mag Tape	At NCC	YC
	3.	-Data Listing	Microfilm	At NCC	YC
	4.	-Time Series Graphics	Microfilm	At NCC	YC
	5.	Final Meteorological & Limnological Data (6 Minute)	Mag Tape	At NCC	YC
	6.	Data Listing of 6 Minute Observations and Hourly Averages	Microfilm	At NCC	YC
	7.	-Time Series Graphics (6 Minute)	Microfilm	At NCC	YC
	8.	-Hourly Average tapes	Mag Tape	At NCC	YC
	9.	Station event logs and histories	Microfilm	At NCC	Y
	10.	System documentation	Microfiche	Dec 1975	YC
	11.	Calibration data	Microfilm	At NCC	Y
	13.	Manual edited data	Mag Tape	At NCC	T
	14.	Sensor Calibrations	Mag Tape	At NCC	T
	15.	Translated cassette data	Mag Tape	At NCC	T
	16.	Rochester Control Center back up tapes	Mag Tape	At NCC	T
	17.	Pre-provisional time series plots	Microfilm	At NCC	T
	18.	Met. Data-Canadian and U.S. Buoys	Mag Tape	At NCC	Y
	19.	Precipitation sensor evaluation	Microfiche	At NCC	Y
101	CEDDA	US IFYGL Ship System-Researcher			
	3.	1 Second data - (1/10 Second, Subsurface)	Mag Tape	At NCC	Y
	4.	EBT On-station data, 6-minute total radiation, Decibar average Subsurface data, 6-minute average data	Mag Tape	At NCC	YC
	5.	DAS Documentation, Calibration, Bridge event logs	Pages	At NCC	T
	6.	DAS Documentation, Logs, and Traces	Microfilm	At NCC	T
	7.	Radiation data and 6 minute averages--Time Series Graphics	Microfilm	Oct 1975	YC
	8.	Manual observations - raw	Pages	At NCC	T
	9.	Manual observations - Edited	Mag Tape	At NCC	YC
	10.	Quality Control Strip Charts	Strip Ch.	Now	T

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	MAJOR SYSTEMS (Cont'd)			
	11.	9-Point digitized EBT	Mag Tape	At NCC	Y
	12.	EBT X,Y traces	Microfilm	At NCC	Y
	13.	Time Series Graphics, 1-second data	Microfilm	Oct 1975	y
	14.	EBT Graphics	Microfilm	At NCC	Y
	15.	1-Second Data Listing	Microfilm	At NCC	T
	16.	RESEARCHER Dissolved oxygen traces	Microfilm	At NCC	Y
	17.	Barograph charts	Microfiche	At NCC	Y
	18.	Processing documentation	Microfiche	Dec 1975	Y
	19.	XBT data	Microfilm	At NCC	Y
	20.	XBT data - digitized at NODC	Mag Tape	At NCC	YC
	21.	System manuals	Pages	At NCC	T
	22.	Navigation plots and graphics	Charts	At NCC	T
	23.	DAS Tapes	Mag Tape	At NCC	T
102	CEDDA	US IFYGL Ship System-ADVANCE II			
	3.	1 Second data - (1/10 Second, Subsurface)	Mag Tape	At NCC	Y
	4.	EBT On-station data, 6 minute total radiation, Decibar average Subsurface) data, 6-minute average data	Mag Tape	At NCC	YC
	5.	DAS Documentation, Calibration, Bridge event logs	Microfilm	At NCC	T
	6.	DAS Documentation, Logs, and Traces	Microfilm	At NCC	T
	7.	Radiation data and 6 minute averages - -Time Series Graphics	Microfilm	Oct 1975	YC
	8.	Manual observations-raw	Pages	At NCC	T
	9.	Manual observations - Edited	Mag Tape	At NCC	YC
	10.	Quality Control Strip Charts	Strip Ch.	Now	T
	11.	9-Point digitized EBT	Mag Tape	At NCC	Y
	12.	EBT X,Y traces	Microfilm	At NCC	Y
	13.	Time Series Graphics, 1-second data	Microfilm	Oct 1975	Y
	14.	EBT Graphics	Microfilm	At NCC	Y
	15.	1 sec. data listing	Microfilm	At NCC	T
	16.	Processing documentation	Microfiche	Dec 1975	Y
	17.	Navigation plots	Charts	At NCC	T
103	CEDDA	Rawinsonde			
	2.	Raw rawinsonde data copy of data tapes	Mag Tape	At NCC	T
	3.	Raw data-Met. parameters	Strip Ch.	At CEDDA	T
	4.	Raw Data Time Series Plots	Microfilm	At NCC	Y
	5.	Final data - 5 Second Averages	Mag Tape	At NCC	Y
	6.	Final data - 10 Millibar Increments	Mag Tape	At NCC	YC
	7.	Final data - 50 Millibar Increments	Mag Tape	At NCC	YC
	8.	Adiabatic charts and listings	Microfilm	At NCC	YC
	10.	Processing document	Microfiche	Dec 1975	YC
	11.	Down Track Trace	Mag Tape	Now	PI
	13.	Documentation and basic information	Microfilm	At NCC	Y
	15.	Unedited, unpacked, raw data	Mag Tape	At NCC	T
110	EPA	STORET Data			
	1.	Jan. 1975 Dump-Fiche	Microfiche	At NCC	TC
	2.	Jan. 1975 Dump-Film	Microfilm	At NCC	TC
	3.	Final data - Microfiche	Microfiche	Sept 1975	Y
	4.	Jan. 1975 Dump-Tape	Mag Tape	At NCC	T
	5.	Final data - Tape	Mag Tape	Sept 1975	Y

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	MAJOR SYSTEMS (Cont'd)			
118	IFYGL	Miscellaneous IFYGL Reports			
	1.	Technical Plan	Microfiche	At NCC	Y
	2.	Bulletin	Microfiche	At NCC	YC
	3.	Technical Manual Series	Microfiche	At NCC	YC
	4.	Scientific Series	Microfiche	.	Y
	5.	Two Nations, One Lake	Microfiche	At NCC	Y
	6.	Proceedings, IFYGL Symposium, AGU	Microfiche	At NCC	Y
	7.	First Annual Report, EPA	Microfiche	At NCC	Y
119	Robertson	IFYGL Intercomparisons			
	1.	Intercomparison Data & Methods	Microfiche	Dec 1975	Y
	2.	Final Report	Microfiche	Dec 1975	Y
	PANEL	SUPPLEMENTARY DATA			
200	NCC/NOAA	Hourly Surface Aviation			
	1.	Surface Weather Observations-Forms	Paper	Now	PI
	2.	Surface Weather Observations-Digitized	Mag Tape	Now	PI
	3.	Surface Weather Observations-Film	Microfiche	Now	PI
205	NCC/NOAA	Synoptic Observations			
	1.	Original 3 & 6-Hrly. Synoptic Obs.	Paper	Now	PI
	2.	Original 3 & 6-Hrly. Synoptic Obs., Film	Microfilm	Now	PI
210	NCC/NOAA	Daily Co-op Observations			
	1.	Record of Climatological Obs.	Paper	Now	PI
	2.	Record of Climatological Obs.,Digitized	Mag Tape	Now	PI
215	NCC/NOAA	Climatic Summaries			
	1.	Local Climatological Data	Paper	Now	PI
	2.	Prel. Local Climatological Data	Paper	Now	PI
	3.	Climatological Data	Paper	Now	PI
	4.	Summary of the Day Listing	Paper	Now	PI
220	NCC/NOAA	Ships of Opportunity			
	1.	Great Lakes Vessel Reporting Form	Paper	Now	PI
	2.	Great Lakes Vessel Reporting Form-Digitized	Mag Tape	Now	PI
225	NCC/NOAA	RADAR Observations			
	1.	RADAR Log	Paper	Now	PI
	2.	RADAR Film (Also see Task 69TW)	Microfilm	Now	PI
230	NCC/NOAA	Station History/Instrumentation			
	1.	NWS Station Description Forms	Paper	Now	PI
235	NCC/NOAA	Solar Radiation			
	1.	Hourly/Daily Digitized Data	Mag Tape	Now	PI
	2.	Hourly/Daily Forms	Paper	Now	PI
	3.	Hourly/Daily Instrument Charts	Charts	Now	PI
240	NCC/NOAA	Recorder Charts			
	1.	Gust Recorder	Paper	Now	PI
	2.	Triple Register	Paper	Now	PI
	3.	Barograms	Paper	Now	PI
	4.	Rain Gage	Paper	Now	PI
	5.	Rain Gage	Mag Tape	Now	PI
245	NCC/NOAA	Analyzed Maps/Charts			
	1.	NMC Charts	Microfilm	Now	PI
	2.	NMC Charts	Paper	Now	PI

Table 5.--Summary of data available from final IFYGL Archive: United States (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	MAJOR SYSTEMS (Cont'd)			
261	NCC/NOAA	Lake Data			
	1.	Monthly Bulletin of Lake Levels	Report	Now	PI
	2.	Great Lakes Water Levels	Report	Now	PI
280	NCC/NOAA	Other			
	1.	Aerial Photographs of Rochester	Prints	Now	PI

Table 6.--Summary of data available from final IFYGL Archive: Canada

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	ATMOSPHERIC BOUNDARY LAYER			
5	Donelan	Direct Measurement of Energy Fluxes			
	1.	Niagara Bar Micromet Data-10 min.	Mag Tape	At NCC	Y
	2.	30-Min Ave. radiation & water level	Microfilm	At NCC	Y
	3.	30-Min Ave. friction & flux data	Microfilm	Sept 1975	Y
15	McBean	Space Spectra in the Free Atmosphere			
	1.	Mesoscale low-level flight data	Mag Tape	At NCC	Y
	2.	Mesoscale low-level flight data	Microfiche	At NCC	Y
28	McBean	Momentum, Heat, & Moisture Transfer			
	1.	Niagara Bar Micromet data	Microfiche	At NCC	Y
44	Elder	Analysis of Energy Fluxes			
	2.	Preliminary estimates	Microfiche	At NCC	Y
	3	Preliminary Energy Budget	Microfiche	At NCC	Y
	4.	Preliminary investigation of wind stress field over Lake Ontario	Microfiche	At NCC	Y
75	Smith	Wind & Temperature Fluctuations			
	1.	Niagara Bar preliminary data	Microfiche	At NCC	Y
	2.	Niagara Bar final data	Microfiche	At NCC	Y
	3.	Bedford Buoy #1 data	Microfiche	At NCC	Y
97	Elder	Meteorological Buoy Measurements			
	1.	10-min observational data & 1 hour averaged data	Mag Tape	At NCC	Y
	2.	Prelim Invest-Wind Stress Field	Microfiche	At NCC	Y
	3.	Field Report	Microfiche	At NCC	Y
	4.	Summary of Met. Buoy & Manual Measurements	Microfiche	At NCC	Y
	5.	A Met. Buoy System for Great Lakes Studies	Microfiche	At NCC	Y
	6.	Listings	Microfilm	At NCC	Y
107	Shaw	Air Pollution Sinks			
	1.	Sulphate deposition by precipitation	Microfiche	At NCC	Y
	PANEL	BIOLOGY - CHEMISTRY			
54	Gorman	Groundwater Supply Near Kingston			
	1.	Geochemical Study of Deadman Bay	Microfiche	At NCC	Y
81	Salbach	Material Balance Lake Ontario			
	1.	Water quality info - preliminary	Microfiche	At NCC	Y
	2.	Water quality data - tributary streams	Microfiche	At NCC	Y
82	Watson	Lake Ontario Zooplankton Migration			
	1.	Energetics of Vert. Migration	Microfiche	At NCC	Y
	2.	Distribution data	Mag Tape	Dec 1975	Y
	3.	Field Nutrient Excretion	Microfiche	Dec 1975	Y
83	Christie	Cooperative Studies of Fish Stocks			
	1.	Times, locations of trawl drags	Microfiche	At NCC	Y
	2.	Effects on the Salmonid Community	Microfiche	At NCC	Y
	3.	Changes in Fish Species Composition	Microfiche	At NCC	Y
84	Owen	Cladophora Growth			
	1.	Location and Extent of Cladophora	Microfiche	Sept 1975	Y
85	Frazer	Nutrient Cycles, Lake Ontario			
	1.	Phosphorus & Nitrogen Transects	Microfiche	At NCC	Y

Table 6.--Summary of data available from final IFYGL Archive: Canada (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	BIOLOGY - CHEMISTRY (Cont'd)			
86	Nicholson	Lake Ontario Surface Plankton Survey			
	1.	Pigment Analysis: Chlorophyll "A"	Microfiche	At NCC	Y
98	Carpenter	Lake Ontario Cross-Section Study			
	2.	Abundance of Diatoms, SW Nearshore	Microfiche	At NCC	Y
101	Munawar	Lake Ontario Primary Production Study			
	1.	Measurement and Prediction	Microfiche	At NCC	Y
	2.	Primary production at an Inshore & Offshore Station	Microfiche	At NCC	Y
	3.	Final Report-Biomass Parameters and Primary Production	Microfiche	Aug 1975	Y
102	Glooschenko	Lake Ontario Diel Pigment Variation			
	1.	Diel Chlorophyll "A" Variations	Microfiche	At NCC	Y
103	Gilbertson	Pesticide Concentration in Birds' Eggs			
	1.	Seasonal Changes, Terns, Hamilton	Microfiche	At NCC	Y
104	Shiomi	Rain Quality Monitoring			
	1.	Composition of Precipitation	Microfiche	Dec 1975	Y
	PANEL	ENERGY BALANCE			
8	Robertson	Shore Gauging Stations			
	1.	Hourly averaged water temperature	Mag Tape	At NCC	Y
	2.	Key Punch Card Documentation	Microfiche	At NCC	Y
	3.	Documentation of System	Microfiche	Sept 1975	Y
32	Rodgers	Thermal Bar Study			
	1.	Energy Budget Study	Microfiche	At NCC	Y
42	Boyce	Heat Storage of Lake Ontario			
	1.	Heat Content Survey Report #1	Microfiche	At NCC	Y
	2.	Heat Content Survey Report #2	Microfiche	At NCC	Y
	3.	Heat Content Survey Report #3	Microfiche	At NCC	Y
	4.	Heat Content Survey Report #4	Microfiche	At NCC	Y
	5.	Heat Content Survey Report #5	Microfiche	At NCC	Y
	6.	Heat Content Survey Report #6	Microfiche	At NCC	Y
	7.	Heat Content Survey Report #7	Microfiche	At NCC	Y
	8.	Heat Content Survey Report #8	Microfiche	At NCC	Y
	9.	Heat Content Survey Report #9	Microfiche	At NCC	Y
	10.	Heat Content Survey Report #10	Microfiche	At NCC	Y
	11.	Final Report	Microfiche	Sept 1975	Y
	12.	River Flows and Temperature Inputs to Lake Ontario	Mag Tape	At NCC	Y
71	Latimer	Canadian Radiation Network			
	1.	AES radiation data-see Task 80			
	3.	Instrument Location & Obstruction Charts	Microfiche	At NCC	Y
72	Ramseier	Floating Ice Research			
	1.	Navigation Season Extension Studies	Microfiche	At NCC	Y
	2.	Studies, Extension of Winter Nav.	Microfiche	At NCC	Y
73	Judge	Terrestrial Heat Flow			
	1.	Analysis of Heat Data	Microfiche	At NCC	Y
	2.	Mud Temperature Gradient	Microfiche	Sept 1975	Y
	3.	Thermal Conductivity of Lake Ontario	Microfiche	Sept 1975	Y
	4.	Bottom Water Temperature	70mm Film	Sept 1975	Y

Table 6.--Summary of data available from final IFYGL Archive: Canada (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	ENERGY BALANCE (Cont'd)			
80	Davies	Radiation Balance Program			
	1.	Radiation data	Mag Tape	At NCC	Y
	3.	Final Report, Canadian Radiation	Microfiche	At NCC	Y
87	Boyce	Heat Flow to Lake Ontario			
		Included in Task 42 EB	Microfilm	Oct 1973	Y
	PANEL	FIELD SUPPORT			
1	Thomson	Remote Sensing			
	1.	Lake Dynamics Utilizing Sun-Glint	Microfiche	At NCC	Y
	2.	High Altitude Remote Sensing	Microfiche	At NCC	Y
	3.	Optical Properties of the Great Lakes	Microfiche	At NCC	Y
30	Rodgers	IFYGL Operations - CCGS PORTE DAUPHINE			
	1.	Digitized Shipboard Data - EBT	Mag Tape	At NCC	Y
		A. Conductivity of Surface Water			Y
		B. Chlorophyll samples			Y
		C. Hourly weather data			Y
		D. Radiation data			Y
	6.	Shipboard data	Microfilm	At NCC	Y
68	CCIW	CCIW Supporting Resources			
	1.	Shipboard data - STAR Format	Mag Tape	At NCC	Y
	2.	Description of STAR System	Microfiche	.	Y
	3.	TSAR Format Documentation	Paper	At NCC	T
	4.	Shipboard EBT data	Mag Tape	At NCC	Y
	5.	Star Monitor Layout	Paper	At NCC	T
	6.	Shipboard data	Microfilm	At NCC	Y
79	McCulloch	Bathymetric Surveys - Lake Ontario			
	1.	Lake Ontario Bathymetric data	Mag Tape	At NCC	Y
94	MacPhail	Data Retransmission by Satellites			
	1.	Data retransmission	Microfiche	At NCC	Y
118	CCIW	Publications			
	1.	Plan of Study for IFYGL	Microfiche	At NCC	Y
	2.	Objective Analysis Surface Pressure	Microfiche	At NCC	Y
	3.	Numerical Models of Airflow	Microfiche	At NCC	Y
	4.	1971 Buoy Intercomparison	Microfiche	At NCC	Y
	5.	Canadian Projects & Supplements 1-4	Microfiche	At NCC	Y
	6.	Canadian IFYGL Data Submissions 7/31/74	Microfiche	At NCC	Y
	7.	Intercomparison - Research Aircraft	Microfiche	At NCC	Y
	8.	Hydrometeorological Studies	Microfiche	At NCC	Y
	9.	The IFYGL Field Year	Microfiche	At NCC	Y
250	IFYGL	Weather Summaries			
	1.	IFYGL "WEATHER DATA" Monthly	Microfiche	At NCC	Y
	PANEL	LAKE METEOROLOGY & EVAPORATION			
16	Irbe	Airborne Radiation Thermometer Surveys			
	1.	Airborne Radiation thermometer maps	Microfiche	At NCC	Y
18	McCulloch	Climatological Network			
	1.	Monthly record Canadian Met. data	Report	At NCC	T
	2.	1972 Ship data - all Lakes	Mag Tape	At NCC	Y
	3.	Island Precipitation data	Microfiche	Sept 1975	Y
	4.	Hourly Weather data	Mag Tape	At NCC	Y

Table 6.--Summary of data available from final IFYGL Archive: Canada (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	LAKE METEOROLOGY & EVAPORATION (Cont'd)			
20	McCulloch	Bedford Tower Program			
	1.	Bedford Tower Met. data	Mag Tape	Dec 1975	Y
21	McCulloch	Canadian Shoreline Network			
	1.	Met. data: Shoreline Stations	Mag Tape	Part At NCC	Y
22	McCulloch	Synoptic Studies			
	1.	Synoptic Studies Analysis	Microfiche	June 1976	Y
23	Pollock	Precipitation in Canada			
	1.	Daily gridpoint values of prec.	Mag Tape	At NCC	Y
	2.	Distrometer & rain gauge data	Mag Tape	At NCC	Y
24	Phillips	Climatological Studies			
	1.	IFYGL Weather Highlights	Microfiche	At NCC	Y
	2.	Surface Weather Maps	Microfilm	At NCC	Y
25	Irbe	Lake Ontario Evaporation by Mass Transfer			
	1.	Monthly estimates	Microfiche	At NCC	Y
27	McCulloch	Island Precipitation Network			
	1.	Supplementary Precipitation data	Microfiche	At NCC	Y
64	Ferguson	Basin Evapotranspiration			
	1.	Monthly maps of Evapotranspiration	Microfiche	Dec 1975	Y
65	McCulloch	Evaporation Pan Network			
	1.	Evaporation Pan Documentation	Microfiche	At NCC	Y
66	Ferguson	Atmospheric Water Balance Study			
	1.	Atmospheric Water Balance	Microfiche	At NCC	Y
67	Webb	Surface Water Temperature Distribution			
	1.	Mean Monthly Temperatures	Microfiche	At NCC	Y
117	McCulloch	APT Photographs			
	1.	ESSA 8 APT photographs	Microfilm	At NCC	Y
	PANEL	TERRESTRIAL WATER BALANCE			
11	Witherspoon	Monthly Water Balance-Lake Ontario Basin			
	1.	Hydrologic Model of the Basin	Microfiche	June 1975	Y
	2.	Storage in the Water Balance	Microfiche	June 1975	Y
12	Witherspoon	Monthly Water Balance of Lake Ontario			
	7.	An Estimte of Water Balance	Microfiche	At NCC	Y
	8.	Preliminary Lake Ontario Water Balance	Microfiche	At NCC	Y
	9.	General Water Balance of Lake Ontario	Microfiche	At NCC	Y
13	Ryckborst	Groundwater Flow Into Lake Ontario			
	1.	Groundwater Flow Simcoe and Ontario	Microfiche	At NCC	Y
	2.	Groundwater Inflow Canadian Side	Microfiche	At NCC	Y
14	Russell	Hydrology of Lake Ontario			
	1.	Tributary data	Microfiche	At NCC	Y
	2.	Daily discharge	Mag Tape	At NCC	Y
38	Ostry	Groundwater Contribution			
	1.	Observation wells	Microfiche	At NCC	Y
	2.	Snow courses	Microfiche	Sept 1975	Y
	3.	Soil moisture	Microfiche	Sept 1975	Y

Table 6.--Summary of data available from final IFYGL Archive: Canada (Continued)

TASK NO	INVESTIGATOR		DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL		TERRESTRIAL WATER BALANCE (Cont'd)			
		4.	Overburden well yields	Microfiche	At NCC	Y
		5.	Hydrology of Forty Mile Creek	Microfiche	At NCC	Y
		6.	Bedrock well yields	Microfiche	At NCC	Y
		7.	Groundwater chemistry-Forty Mile Creek	Microfiche	At NCC	Y
		8.	Surficial geology,N. Shore-Newcastle	Microfiche	At NCC	Y
		9.	Hydrogeology-Bowmanville,Newcastle	Microfiche	At NCC	Y
46	MacDonald		St. Lawrence-Niagara Riv.Measuring Prog.			
		1.	Inflow measurements	Microfiche	At NCC	Y
49	Adams		Snow Stratigraphy and Distribution			
		1.	Peterborough Area: Met. data	Microfiche	Dec 1975	Y
		7.	Peterborough Area: Snow data	Microfiche	At NCC	Y
69	Henderson		Pleistocene Mapping			
		1.	Maps and charts	Microfiche	June 1976	Y
74	Dohler		Water Level Network			
		1.	Port Weller(Last of period not received yet)	Mag Tape	Part At NCC	Y
		2.	Toronto	Mag Tape	Part At NCC	Y
		3.	Burlington	Mag Tape	Part At NCC	Y
		4.	Cobourg	Mag Tape	Part At NCC	Y
		5.	Point Petre	Mag Tape	Part At NCC	Y
		6.	Kingston	Mag Tape	Part At NCC	Y
		7.	Format Hrly Header & Monthly Cards	Paper	At NCC	Y
		8.	Water levels	Mag Tape	At NCC	Y
116	Loijens		Airborne Gamma-Ray Snow Survey			
		1.	Snow-Water Equivalent	Microfiche	At NCC	Y
		2.	Experimental Snow Survey	Microfiche	At NCC	Y
		3.	Comparison of Water Equivalent	Microfiche	At NCC	Y
	PANEL		WATER MOVEMENT			
34	Rodgers		Circulation Near Toronto			
		1.	Tower current speed & direction water temperature	Mag Tape	Availability uncertain	Y
40	Csanady		Coastal Chain Study			
		1.	Provisional Reports	Microfiche	At NCC	Y
		2.	Final Report	Microfiche	At NCC	Y
		4.	Daily Summary - Presquile	Pun'd Cards	At NCC	T
		5.	Daily Summary - Oshawa	Pun'd Cards	At NCC	T
		6.	Daily Summary: Presquile & Oshawa	Mag Tape	At NCC	Y
		7.	Baroclinic Coastal Jets	Microfiche	At NCC	Y
43	Boyce		Internal Wave Measurements			
		1.	Transect cross section	Microfiche	Sept 1975	Y
		2.	Fixed Temperature Profiler (FTP) data	Not Known	Sept 1975	Y
		3.	Transect tape	Mag Tape	Sept 1975	Y
		4.	FTP data file	Mag Tape	Sept 1975	Y
		5.	Transect tapes	Mag Tape	Sept 1975	Y
45	Bennett		Lake Current Measurements			
		2.	10 minute current temperature data	Mag Tape	At NCC	Y
		3.	Final Report	Microfiche	Dec 1976	Y
		4.	10 minute current data listing	Microfilm	At NCC	Y
70	Falconer		Ground Truth for Remote Sensing			
		1.	Analysis of ERTS and Aircraft data	Microfiche	Sept 1975	Y

Table 6.--Summary of data available from final IFYGL Archive: Canada (Continued)

TASK NO	INVESTIGATOR	DESCRIPTION OF DATA	MEDIA	DATE AVAILABLE FROM INVESTIGATOR	ARCHIVE
	PANEL	WATER MOVEMENT (Cont'd)			
76	Holland	Surface Wave Studies			
	1.	Final Report - Wave Climate Study	Microfiche	Oct 1975	Y
	2.	Wave Climate Data - Cobourg	Mag Tape	At NCC	Y
	4.	Wave Climate Data-Main Duck Island	Mag Tape	At NCC	Y
	5.	Equiv. Wave Heights vs. Period, 3 Stns.	Microfiche	At NCC	Y
	8.	Wave Climate Data - Toronto	Mag Tape	At NCC	Y
	10.	Format for Wave Climate Study	Microfiche	At NCC	Y
89	Murthy	Turbulent Diffusion Studies			
	1.	Large Scale Diffusion Studies	Microfiche	At NCC	Y
	2.	Nearshore Diffusion Studies	Microfiche	At NCC	Y
	3.	Lagrangian and Current Measurements	Microfiche	At NCC	Y
	4.	Diffusion in Thermocline & Hypolimnion regions	Microfiche	At NCC	Y
	5.	Dispersion of Floatables	Microfiche	At NCC	Y
	6.	Observations of Lateral Shear	Microfiche	At NCC	Y
95	Simons	Hydrodynamical Modelling			
	6.	First Report: Model Study of Agnes	Microfiche	At NCC	Y
	7.	Model Study of Betty Storm	Microfiche	At NCC	Y
	8.	Development of Numerical Models	Microfiche	At NCC	Y
	9.	Development of Numerical Models Part 2	Microfiche	At NCC	Y
	10.	3 Dimensional Models	Microfiche	At NCC	Y
	11.	Obs. & Computed Current-Hurricane Agnes	Microfiche	At NCC	Y
	12.	Hydrodynamical Modelling Studies	Microfiche	At NCC	Y
	13.	Verification of Numerical Models Part 1	Microfiche	At NCC	Y
109	Rodgers	Upwelling Study			
	1.	Water Temp. (EBT): Included in Task 30			
110	Arajs	Hydro Intake Study			
	1.	Water current & temp.: Chub Point, Bowmanville, Weoleyville, Pickering and Lennox	Mag Tape	At NCC	Y
	2.	Nearshore Currents and Temperatures Pickering-Cobourg	Microfiche	At NCC	Y
111	Palmer	Lakeview Dispersion Study			
	1.	Current Meter Data - Lakeview	Mag Tape	At NCC	Y
	2.	Current Meter Data - Lorne Park	Mag Tape	At NCC	Y
115	Cho	Wave Climatology			
		Manual Records at CCIW			